



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

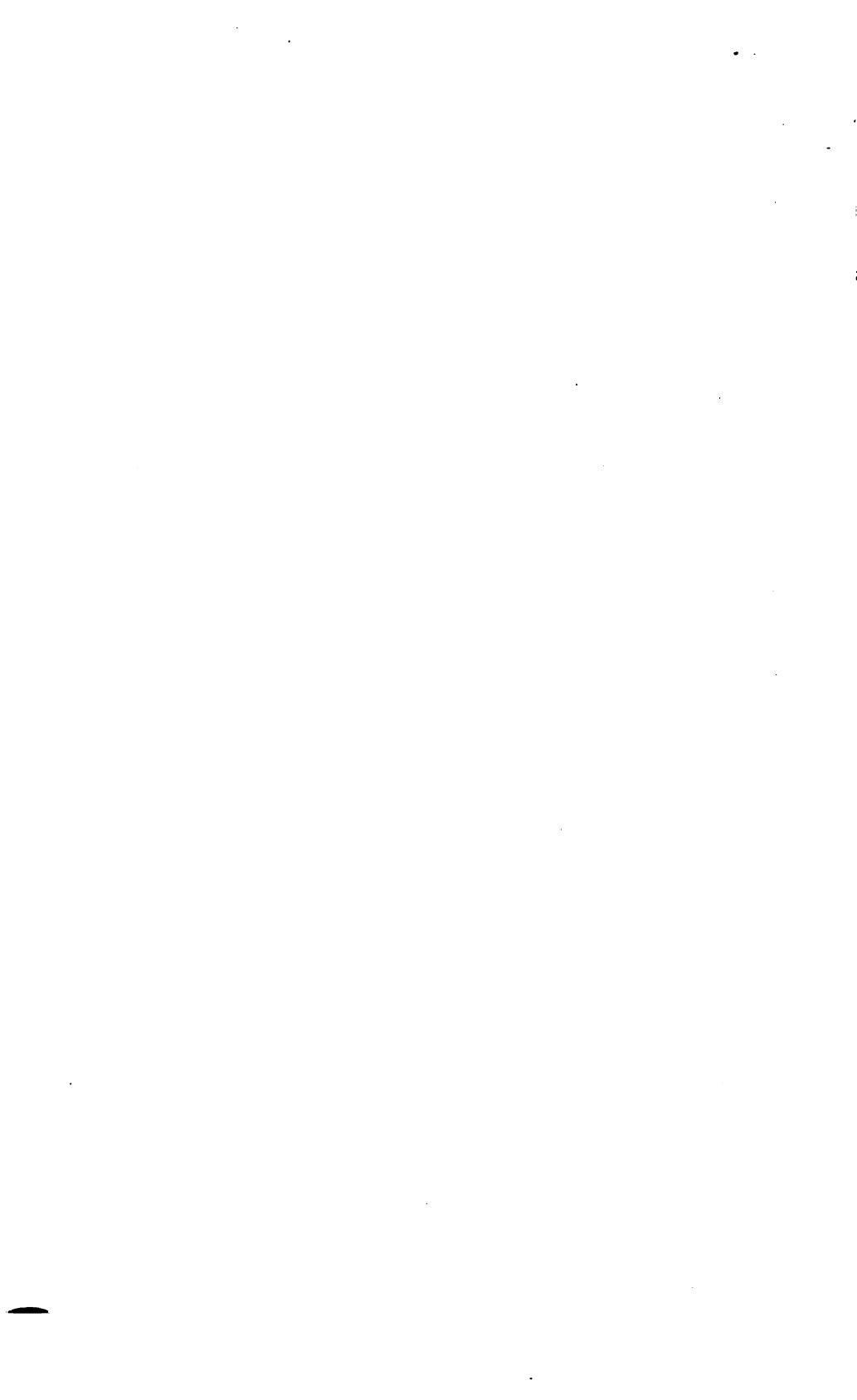
We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

BOSTON
MEDICAL LIBRARY
8 THE FENWAY



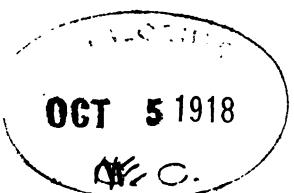
THE JOURNAL
—OF THE—
AMERICAN CHEMICAL SOCIETY.

GENERAL INDEX
—TO THE—
FIRST TWENTY VOLUMES,

1879-1898,

—AND TO THE—
PROCEEDINGS,
1877-1879.

EASTON, PA.:
THE CHEMICAL PUBLISHING CO.
1902.



THE earlier volumes of the Journal contained abstracts of papers which had appeared elsewhere. So many of the names of the authors of these papers were erroneously printed that we had to verify all such by reference to the original, unless it was already well known to us. They appear in this index in the correct form, with initials of Christian names supplied, if possible. When it could not be determined whether M. was an initial or the French equivalent of our Mr., it was printed [M.]. In a few cases, articles which it is suspected belong to the same author appear under entries slightly different in form; the two entries under Guyard, and the first and third under Monnet are examples. Had Monnet y Cos written more frequently, it would have been possible to resolve the doubt which prevented the placing all papers by a person under his name in its latest form, according to the established rule. In case of variety in ways of printing certain names, the Royal Society's Catalogue has commonly been followed. But the few Russian names cited have not been rescued from the confusion produced by transliteration into English from both French and German.

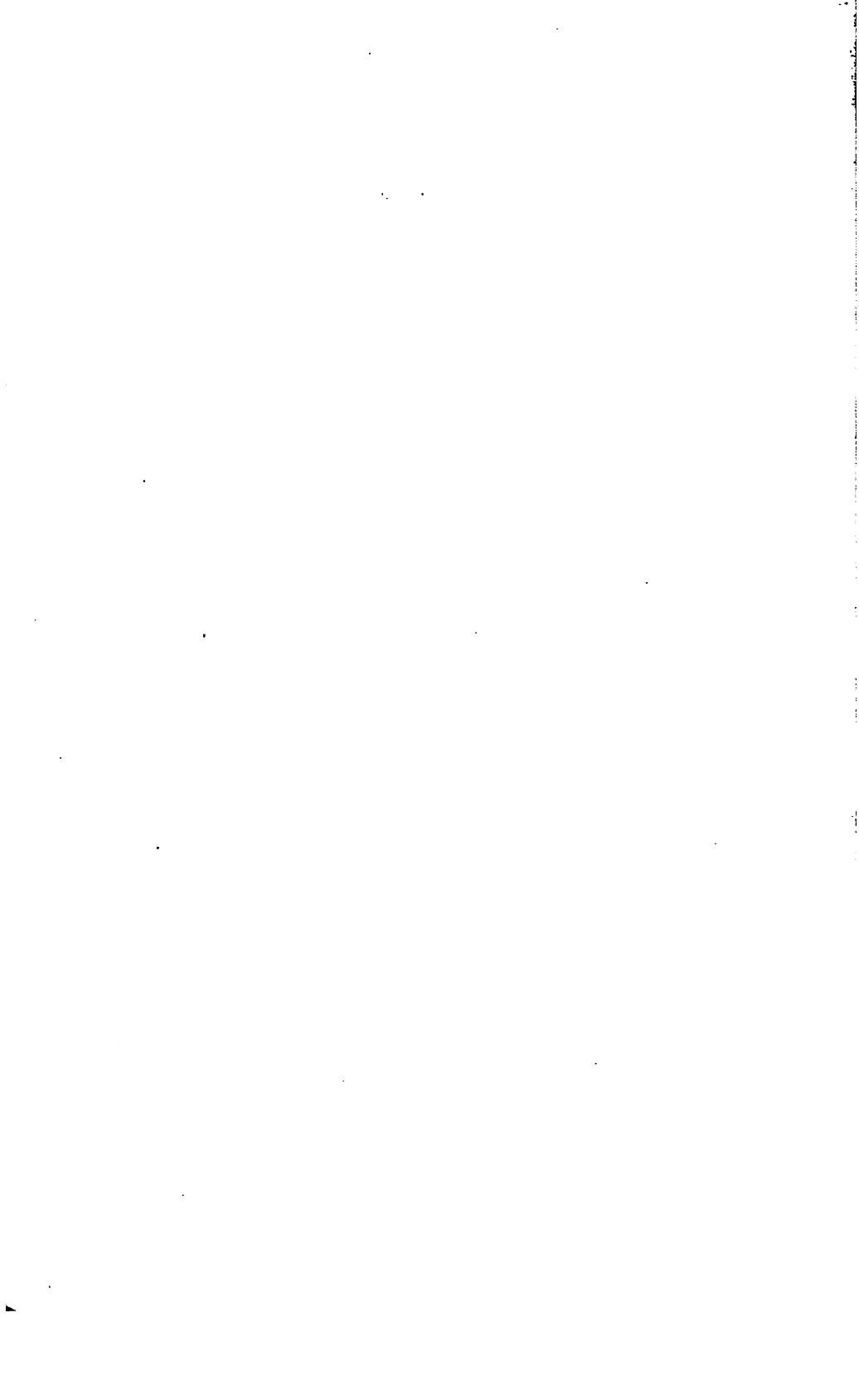
In the index of authors, few liberties have been taken with titles, except in spelling uniformly certain words, such as benzene, on which probably all would now agree. In the index of subjects, it was thought desirable to secure somewhat more uniformity of spelling and nomenclature in the titles of abstracts.

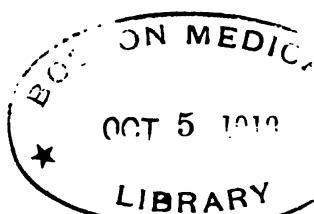
The index has been printed from the original cards which had been prepared directly from the pages of the Journal and afterwards twice verified. Having been arranged alphabetically, they were made ready for the printer by cancelling words common to successive entries, and by changes in order of words and other slight modifications of expressions. In an index so prepared, the compiler sometimes satisfies himself with a sequence and relation of entries not quite so felicitous as if everything had been rewritten, but the figures submitted to the printer cannot be erroneous, except by becoming illegible. In our labor of love for the Society, we thought that accuracy of reference to page and volume was that most desired at our hands. The fact that the preparation of the index was divided somewhat equally between two compilers has lessened the uniformity of treatment which might have been secured otherwise.

This index includes not only the twenty volumes of the Journal issued in the years 1879 to 1898 inclusive, but also the volumes of an earlier publication of the Society entitled "Proceedings of the American Chemical Society." This earlier publication consisted of two volumes, of which the first appeared in two parts paged separately. We have also made references to some statements of facts contained in the proceedings of the sections of the Society issued with the later volumes of the Journal; these references have the number of the page enclosed in a parenthesis. The volumes of the Journal are referred to by the numbers from 1 to 20. The volumes of the Proceedings are designated as follows:

P. 1, Proceedings, Volume I, Part I, 1877.
P. 1, 2, Proceedings, Volume I, Part II, 1878.
P. 2, Proceedings, Volume II, 1879.

E. W. M.
O. F. T.





INDEX OF AUTHORS.

ABEL, Sir F. A., and W. H. Deering. On the condition in which carbon exists in steel (abst.), 5, 114: See also Noble, Sir A.

ADAM, A. Milk in the Paris hospitals (abst.), - - - - - 8, 62

ADAM, P. Brominated xylenol (abst.), 6, 132: See also Grimaux, E.

ADAMS, F. D. Presence of chlorine in scapolites (abst.), - - - - - 1, 391

ADAMS, M. See Young, S. W.

ADAMS, M. A. New method for analysis of milk (abst.), - - - - - 8, 204

ADOR, E. *iso*-Phthalophenone (abst.), - - - - - 2, 131, 367

ADOR, E., and J. M. Crafts. Action of phthalic anhydride on naphthalene in presence of aluminum chloride (abst.), - - - - - 1, 485

ADOR, E., and A. Rilliet. Hydrocarbons from methyl chloride and toluene (abst.), 1, 280: Hydrocarbons obtained from methyl chloride and benzene (abst.), - - - - - 1, 398

AILLAUD. Analyses of water from Isthmus of Panama (abst.), - - - - - 4, 242

AITKEN, A. P. Rapid and accurate method of determining moisture and oil in linseed cakes, etc., - - - - - 16, 114

AKITT, T. See Mills, E. J.

ALBERT, H., and L. Siegfried. Determination of reverted phosphoric acid (abst.), - - - - - 1, 355

ALBITZKY, A. β -Dipropylacrylic acid from β -dipropylethylenelactic acid (abst.), 7, 83: Coefficient of refraction of the hydrocarbon, $C_{12}H_{20}$, from allyldimethylcarbinol (abst.), - - - - - 7, 85

ALEXÉEFF, P. Constitution of the nitro-compounds of the aliphatic series (abst.), 8, 202, 274: Constitutional formula of indigo (abst.), - - - - - 6, 135

ALLARY, E. Iodimetry, founded upon the use of permanent standard solutions (abst.), 1, 490: Regeneration of the acid residues from the manufacture of guncotton (abst.), - - - - - 9, 38

ALLEN, A. H. Estimation of nitrogen in steel (abst.), 1, 562: Determination of silicon in iron and steel (abst.), 1, 562: Expression of results obtained by Koettstorfer's method, etc. (abst.), 1, 567: On the stability of hypobromite solution, and its use for the titration of oils, etc. (abst.), 6, 99: Methods of examining, and chemistry of, the fixed oils (abst.), 8, 98, 103: Fat of porpoise milk (abst.), 8, 184: Determination of glycerol produced by saponification of fatty oils (abst.), 8, 204: Determination of sulphur in oils (abst.), 10, 44: Detection of saccharin in beer (abst.), 10, 88: Use of the term "normal" in volumetric analysis (abst.), 10, 114: Examination of water for technical purposes (abst.), - - - - - 10, 180

ALDEN, A. H., W. Chattaway, and W. Thomson. Adam's method for milk analysis (abst.), - - - - - 9, 13

ALLEN, E. W., and B. Tollens. Xylose and wood gum from straw, etc. (abst.), - - - - - 12, 158

ALLIEN, F. Rise of freezing-point in thermometers (abst.), - - - - - 12, 413

ALSOPI, W. K., and J. H. Yocom. Composition of the ashes of some raw tanning materials, - - - - - 20, 338

AMTHOR, C. Identification of caramel (abst.), 7, 62: Analyses of Alsace-Lorraine wines of 1885 (abst.), 9, 219: See also Musculus, F.

ANDERSON, J. T. Identification of arsenic and antimony, - - - - - 13, 210

ANDRÉ, G. Magnesium oxychlorides, 4, 230: Heat of formation of some oxychlorides and oxybromides of mercury (abst.), 6, 127: New oxychloride of zinc (abst.), 4, 239: See also Berthelot, M.

ANDREAE, G. L. Temperature regulator (abst.), 1, 91: Solubility of salts in water at different temperatures (abst.), - - - - - 7, 27

ANDREWS, G. F. Notes on aluminum, - - - - - 16, 485

ANDREWS, L. Analysis of alloys of lead, tin, antimony, and arsenic, 17, 869: Reduction of sulphuric acid by copper as a function of temperature, - - - - - 18, 251

ANDREWS, L. W. Ethylene iodopicrate (abst.), - - - - - 2, 224

ANDREWS, W. H. See Campbell, E. D.

ANDREWS, W. W. Self-regulating gas generator, 17, 304: Extensions of the plaster of Paris method in blowpipe analysis, - - - - - 18, 849

ANGELBIS, A., and Anschütz, R. Synthesis of dimethylanthracene hydride and diphenylethane (abst.), 6, 165: Action of aluminum chloride on vinyl bromide or tribromide in benzene (abst.), - - - - - 6, 166

ANSCHÜTZ, R. Remarks on the paper of Angelbis and Anschütz on the action of aluminum chloride on vinyl bromide, etc. (abst.), 6, 166: Remarks on chrysanthrene (abst.), 7, 83: Acridine picrate (abst.), - - - - - 7, 84

ANSCHÜTZ, R., and C. Bennett. Action of acetyl chloride and glacial acetic acid on fumaric acid (abst.), - - - - - 5, 18

ANSCHÜTZ, R., and F. Eltzbacher. Synthesis of anthracene (abst.), 5, 132

ANSCHÜTZ, R., and C. Romig. Nitration products of diphenylethane (abst.), - - - - - 8, 54

ANSCHÜTZ, R., and G. Schultz. Phenanthrenequinone (abst.), - - - - - 2, 48

ANSCHÜTZ, R. See also Angelbis, A.

ARCHBOLD, G. Preparation of paper pulp (abst.), 5, 122: Albuminoids of maize, - - - - - 14, 313

ARCHBUTT, L. Analysis of grease (abst.), - - - - - 10, 115

ARMSTRONG, H. E. Law of substitution in the naphthalene series (abst.), 4, 206: Note on the formation and constitution of fulminates (abst.), - - - - - 6, 46

ARNAUD, A. Investigations on the composition and nature of carotin (abst.), - - - - - 8, 204

ARNOLD, C. Estimation of nitrogen in nitrates and nitro-compounds (abst.), 7, 91: Estimation of nitrogen (abst.), - - - - - 8, 25

ARNOLD, J. O. Allen's method for the detection of hop substitutes in beer (abst.), - - - - - 9, 220

ARNOLD, J. O., and H. J. Hardy. Estimation of chromium in iron and steel (abst.), 10, 66 : Two methods for estimating sulphur in steel (abst.), - - - - - 10, 84

ARONHEIM, B. Action of nitrous acid on resorcinol ether (abst.), 1, 161 ; Schützenberger's acetates of chlorine and iodine (abst.), 1, 161

ARRHENIUS, S. On the validity of the Clausius-Williamson hypothesis, etc. (abst.), - - - - - 6, 73

ARSONVAL, A. D'. Determination of glucose in blood (abst.), - - - - - 1, 351

ARTH, G. Oxidation of menthol by potassium permanganate (abst.), 6, 164 : New reaction of ethyl carbonate (abst.), 6, 171 : Two properties of urethanes of the aliphatic series (abst.), - - - - - 8, 166

ASBOTH, A. VON. Determination of starch (abst.), - - - - - 9, 46

ASCHAN, O. Action of mustard oils on amido acids (abst.), - - - - - 7, 85

ATKINSON, ELIZABETH A. Metal separations by means of hydrobromic acid gas, 20, 797 : Indium in tungsten minerals, - - - - - 20, 811

ATKINSON, ELIZABETH A., and E. F. Smith. Separation of iron from beryllium, - - - - - 17, 688

ATKINSON, R. W. Determination of phosphoric acid (abst.), 1, 538 : Some compounds of antimony and bismuth containing two halogens (abst.), 5, 113 : Notes on the volumetric estimation of iron (abst.), - - - - - 6, 242

ATKINSON, R. W., and H. Yoshida. Peppermint camphor (menthol) and some of its derivatives (abst.), - - - - - 4, 144

ATTWOOD, G. Blowpipe assay of mercury ores (abst.), - - - - - 1, 370

ATWATER, W. O., and G. Warnecke. Determination of fats, P. 2, 84

AUBERT. See Lepine, R.

AUBRY. Detection of salicylic acid in beer (abst.), - - - - - 1, 578

AUCHY, G. Volumetric estimation of manganese, 17, 943 : Precipitation of phosphomolybdate in steel analysis, 18, 170 : Drown's method of determining sulphur in pig iron, 18, 406 : Sources of error in determining manganese in steel, 18, 498 : Determination of phosphorus in steel and cast iron, 18, 955 : Method for complete analysis of iron ores, with notes on Särnström's method of determining manganese, 19, 139 : Moist combustion method of determining carbon in steel, 20, 243 : Error in carbon determinations made with weighed potash bulbs, 20, 528 : On Drown's method of determining silicon in steel, - - - - - 20, 547

AUDOYNaud, A. Test for olive oil (abst.), 7, 250 : Adulteration of olive oil (abst.), - - - - - 8, 40

AUGER, V. Action of oenanthaldehyde and oenanthyl chloride on dimethylaniline in the presence of zinc chloride (abst.), - - - - - 9, 7

AUSTEN, P. T. A new specimen bottle, - - - - - 18, 412

AUSTEN, P. T., and W. H. Broadhurst. Absorbent blocks, - - - - - 17, 472

AUSTEN, P. T., and W. A. Horton. Convenient form of universal hand-clamp, - - - - - 17, 611

AUSTEN, P. T., and F. A. Wilber. Determination of titanium in iron ores, 4, 165 ; Clarification of water by alum (abst.), - - - - - 7, 200

INDEX OF AUTHORS.

AUSTIN, A. Diamylbenzene (abst.), - - - - - 1, 486

AUTENRIETH, W. Mixed acid anhydrides (abst.), - - - - - 10, 13

AUWERS, K., and V. Meyer. Tetramethylsuccinic and trimethylglutaric acids (abst.), - - - - - 12, 157

AUWERS, K. See also Meyer, V.

AVERY, S., and B. Dales. Electrolytic determination of cadmium, 19, 379; Electrolytic determination of cadmium (note), - - - - - 19, 513

AVERY, S. See Nicholson, H. H.

AYRTON, M. Improvements in bleaching or purifying oils and grease (abst.), - - - - - 8, 43

BABCOCK, S. C. See Campbell, E. D.

BACHMAN, I. A. Improved methods of water analysis, 17, 296; Chemical brick for Glover towers, - - - - - 17, 360

BÄCKSTRÖM, H., and G. Paykull. Volume and quantity of carbon in the gases evolved by solution of iron in acids (abst.), - - - - - 10, 25

BAEKELAND, L. Use of fluorides in the manufacture of alcohol, 14, 212

BAER, S. H., and A. B. Prescott. Dipyridine methylene iodide, etc., 18, 988

BAER, S. H. See Prescott, A. B.

BAEYER, A. Reaction for isatin (abst.), 1, 543: Compounds of the indigo group (abst.), 4, 175; - - - - - 5, 21

BAEYER, A., and V. Drewsen. Preparation of indigo-blue from *o*-nitrobenzaldehyde (abst.), - - - - - 5, 63

BAEYER, A., and O. R. Jackson. Synthesis of homologues of hydrocarbostyryl and quinoline (abst.), 2, 170: Synthesis of methylketole, an isomer of skatole (abst.), - - - - - 2, 174

BAEYER, A., and L. Landsberg. Syntheses by means of phenylacetylene and its derivatives (abst.), - - - - - 4, 176, 206

BAEYER, A., and C. Pape. Derivatives of *o*-xylene (abst.), - - - - - 7, 115

BAEYER, A., and W. H. Perkin, Jr. On benzoylacetic acid (abst.), 6, 84; On the derivatives of hydrindonaphthene (abst.), 6, 87, 160: Syntheses of naphthalene derivatives (abst.), - - - - - 7, 115

BAIRD, J. W. Dictionary of the action of heat upon metallic salts, with references to the literature, - - - - - 5, 135

BAIRD, W. H. See Stone, W. E.

BAITHER, O. Tetramethylthiomethiobenzophenone (abst.), - - - - - 10, 40

BALBIANO, L. Amides and anilides of β -oxybutyric acid (abst.), 2, 367; Synthesis of pyrazole (abst.), - - - - - 12, 233

BALLAND. Palm wine from Algeria (abst.), 1, 402; Presence of alkaloids in old flours (abst.), - - - - - 8, 167

BALLING, C. M. Determination of silver in galena by Volhard's method (abst.), - - - - - 1, 562

BALLO, M. Action of dehydrating bodies on camphoric acid and its amides (abst.), 1, 397; 2, 187: On carbonic acid hydrate (abst.), 5, 64; Remarks on the chemistry of plants (abst.), - - - - - 6, 93

BALLY, O. Phenylated piperidine and pyridine-bases (abst.), - - - - - 9, 196

BALSOHN, M. Action of ethylene on benzene in presence of alu-

minum chloride (abst.), 1, 390: Synthesis of ethylbenzene by means of ether and benzene (abst.), 2, 92: See also Friedel, C.

BAMBERGER, E. Color reaction for *o*-diketones (abst.), 8, 58: Note on camphoric acid (abst.), 12, 161: Decomposition of alicyclic 1:5-tetrahydronaphthylenediamine into optically active components (abst.), - - - - - 12, 164

BAMBERGER, E., and S. C. Hooker. Retene (abst.), - - - - - 7, 227

BAMBERGER, E., and W. Lodter. Action of carbon disulphide on menthol and borneol (abst.), - - - - - 12, 161

BANNOW, A. Pure butyric acid (abst.), - - - - - 9, 6

BARBIER, P. Action of acetic anhydride on some aldehyde-phenols (abst.), - - - - - 2, 130

BARBIER, P., and L. Roux. Action of heat on acetones (abst.), - - - - - 8, 200

BARBIER, P., and L. Vignon. Researches on pheno-safranine (abst.), 9, 170: Preparation of safranines (abst.), 10, 22: Preparation of substituted safranines (abst.), - - - - - 10, 22

BARDY, C., and L. Bordet. Preparation of methyl formate and pure methyl alcohol (abst.), 1, 389; Determination of methyl alcohol in commercial wood spirit (abst.), - - - - - 1, 486, 579

BARKER, G. F. The borderland between physics and chemistry (presidential address), - - - - - 13, 11

BARR, K. L. See Wills, E. J.

BARTH, L. VON, and J. Schreder. Diphenols (abst.), - - - - - 1, 293

BARTH, M. See Nessler, J.

BARTLEY, E. H. A rapid method of estimating urea in urine, 12, 283: Rapid estimation of uric acid in urine, - - - - - 19, 649

BARTOLI, A., and G. Papasogli. Synthesis of organic compounds by electrolysis, etc., (abst.), - - - - - 4, 239

BARTON, G. E. Examination of glycerol for use in the nitroglycerol manufacture, 17, 277; Arsenic in glycerol, 17, 883; Manufacture of dynamite, 19, 500; Volumetric apparatus, - - - - - 20, 731

BASKERVILLE, C. Separation of titanium from iron, 16, 427: Separation of zirconium by means of sulphurous acid, 16, 475: Reactions between copper and concentrated sulphuric acid, 17, 904: Reduction of concentrated sulphuric acid by copper, - - - - - 18, 942

BASKERVILLE, C., and F. W. Miller. Reactions between mercury and concentrated sulphuric acid, 19, 873; Decomposition of concentrated sulphuric acid by mercury at ordinary temperatures, 20, 515

BASKERVILLE, C. See Venable, F. P.

BASSETT, L. L. See Fleck, H.

BATTERSHALL, S. P. Note on fibrous sodic chloride, - - - - - P. 2, 141

BAUBIGNY, H. Existence and formation of nickel protosesquioxide (abst.), 1, 295: Action of insoluble sulphides on nickel sulphate, etc. (abst.), 4, 239: Action of hydrogen sulphide on nickel chloride (abst.), 4, 240: Preparation of chromium sulphate (abst.), 6, 78: Equivalent of chromium, determined from the sulphate (abst.), 6, 127: On the oxidation and determination of chromium (abst.), 6, 136

BAUDRIMONT, A. Detection of fuchsine in wine (abst.) - - - - 1, 578

BAUER, A., and K. Hazura. Linoleic acid (abst.) - - - - 8, 185

BAUMANN, E. Aromatic products of the animal body (abst.) - - - - 2, 226

BAUMANN, E., and F. Tiemann. Potassium hydrindigotinsulphate and indoxylsulphate (abst.) - - - - 2, 371

BAUMERT, G. Action of sodium on lupinine (abst.) 5, 17 : Anhydro-lupinine (abst.) - - - - 5, 17

BAUMHAUER, E. H. VON. Thermoregulator, which can be used as a registering thermometer (abst.) - - - - 7, 92

BAYER, K. J. Method for determining aluminum (abst.) - - - - 7, 296

BAYLEY, T. Cyclical law of the elements, 20, 927 : Atomic volume as a periodic function - - - - 20, 935

BAYLEY, W. S. See Morse, H. N.

BEADLE, C. See Cross, C. F.

BEAL, W. H. Determination of volatile and insoluble fatty acids in butter-fat - - - - 16, 673

BEAM, W. See Leffmann, H.

BEAMER, M., and F. W. Clarke. New salts of aniline (abst.) 1, 286 : Note on lithium picrate (abst.) - - - - 1, 286

BÉCHAMP, A. Action of hydrogen dioxide on the coloring-matter of the blood and on hematosin (abst.) 4, 240 : Decomposition of hydrogen dioxide by fibrin (abst.) - - - - 5, 120

BECHI, G. VON. Succinyl compounds of toluidine (abst.) 1, 160, 397

BECKER, F. Detection of adulterations in beeswax (abst.) - - - - 1, 578

BECKER, G. F. Reduction of weighings to vacuum (abst.) - - - - 1, 250

BECKER, P. See Michaelis, A.

BECKHURST, H. Reaction of ptomaines (abst.) - - - - 4, 193

BECKMANN, E. *iso*-Nitroso-compounds (abst.) - - - - 9, 195

BECKURTS, H. See Otto, R.

BEDALL, K., and O. Fischer. α -Oxyquinoline (abst.) - - - - 5, 19

BEDSON, P. P. Derivatives of phenylacetic acid (abst.) - - - - 2, 348

BEERS, F. T. See Pond, F. J.

BEESON, J. L. Estimation of crude fiber in sugar-cane, 16, 308 : Apparatus for estimating the water-holding power of soils, 17, 769 : Occurrence of the amines in the juice of sugar-cane, 18, 743 : Extraction apparatus for food-stuff analysis, 18, 744 : A study of the clarification of sugar-cane juice, 19, 56 : Improvement in drying chambers, 19, 349 : Physical effects of various salts and fertilizer ingredients upon the moisture supply of a soil, 19, 620 : Nitric nitrogen produced by the pea, - - - - 20, 793

BEETZ, W. VON. Electromotive force of thermoelectric batteries (abst.) - - - - 1, 585

BÉHAL, A. Caprylidene, an acetylene hydrocarbon (abst.) 9, 6 : Preparation of allyl iodide, etc. (abst.) 9, 100 : Preparation of *iso*-propylacetylene (abst.) 10, 81 : Hydration of tolane (abst.) 10, 83 : Alcoholic silver nitrate as a reagent for acetylene hydrocarbons (abst.) - - - - 10, 87

BEHR, A. Occurrence of aconitic acid in cane-juice and raw sugar, P. 1, 220 : Crystallized anhydrous grape sugar, - - - - - 4, 11

BEHREND, P. Action of sulphuryl chloride on alcohols (abst.), - - - - - 2, 136

BEILBY, G. Specific gravity of paraffin, solid, fused, and in solution (abst.), - - - - - 5, 236

BEILSTEIN, F. Separation of nickel from zinc (abst.), 1, 332 : Dinitroparatoluidine (abst.), - - - - - 2, 224

BEILSTEIN, F., and L. Jawein. Determination of zinc by electrolysis (abst.), 1, 330 : Electrolytic determination of cadmium (abst.), 1, 330 : Separation of manganese from iron (abst.), - - - - - 1, 533

BEILSTEIN, F., and A. Kurbatow. Chloranilines and chloronitranilines (abst.), 2, 57 ; Behavior of some nitro compounds towards hydrogen sulphide (abst.), 2, 178 ; Dinitronaphthalene (abst.), 2, 369 ; Dinitrobenzoic acid (abst.), - - - - - 2, 369

BEIN, S. Coloring-matter in yolk of eggs (abst.), 12, 165 : Quantitative determination of egg substance (abst.), - - - - - 12, 176

BEKETOFF, N. N. Relations dependent on atomic weight (abst.), 6, 128

BELDEN, A. W. See Venable, F. P.

BELL, J. C. Analysis of flour and bread (abst.), 1, 566 : Analyses of tea (abst.), - - - - - 4, 189

BELLENOT, G. See Perkin, W. H., Jr.

BENCKISER, T. See Nietzki, R.

BENEDICT, C. H. See Dennis, L. M.

BENEDICT, F. G., and R. S. Norris. Determination of small quantities of alcohol, - - - - - 20, 293

BENEDIKT, R., and M. Cantor. Determination of glycerol (abst.), 10, 196

BENEDIKT, R. See Weselsky, P.

BENKER. See Lasne.

BENKERT, A. L., and E. F. Smith. Separation of bismuth from lead, - - - - - 18, 1055

BENNETT, A. A., and E. E. Pammel. Study of some gas-producing bacteria, - - - - - 18, 157

BENNETT, A. A., and L. A. Placeway. Determination of chlorine, bromine, and iodine, in mixtures, - - - - - 18, 688

BENNERT, C. See Anschütz, R.

BENTLEY, W. B. See Menke, A. E.

BERAN, A. β -Amidoctylbenzene, β -amidocaprylbenzene, and an amidoctyltoluene (abst.), - - - - - 7, 176

BERG, P. VON. Separation of zinc from iron, cobalt, and nickel (abst.), 9, 9 : Determination of the sulphides of zinc and cadmium (abst.), - - - - - 9, 35

BERGHE, J. VAN DER. Copper normally present in wheat (abst.), 4, 188

BERGLUND, E. Method for separating tin, antimony, and arsenic (abst.), 6, 98 : Quantitative separation of chlorine and bromine (abst.), - - - - - 7, 178

BERING, H. Determinations of solids in milk (abst.), - - - - - 1, 357

BERNHARDT, W. On condensations, - - - - - 13, 122

BERNTSEN, A. Amidines and thiamides of monobasic organic acids (abst.), - - - - - 2, 188

BERNTSEN, A., and G. Friese. Normal dithiouethanes (abst.). - 4, 268

BERNTSEN, A., and W. Hess. Ammonium bases derived from quinoline (abst.), - - - - - 7, 119

BERT, P., and P. Regnard. Action of hydrogen dioxide in organic matter and on fermentation (abst.), - - - - - 4, 239

BERTHELOT, M. Researches on ozone and electricity (abst.), 1, 171 : Formation of ethereal salts of hydracids in the gaseous state (abst.), 1, 172 : Heat disengaged by combining carbon monoxide with other bodies (abst.), 1, 279 : Specific heat and heat of fusion of gallium (abst.), 1, 279 : Reciprocal displacement between weak acids (abst.), 1, 279: Rotary power of styrolene (abst.), 1, 279: Relative affinities and reciprocal displacement of oxygen and the halogens (abst.), 1, 280 : Decomposition of hydracids by metals (abst.), 1, 384 : Reciprocal displacements between oxygen, sulphur, and the halogens, when combined with hydrogen (abst.), 1, 385 : Role of auxiliary acids in etherification (abst.), 1, 386 : Direct combination of cyanogen with hydrogen and the metals (abst.), 1, 398 ; 2, 92 : Remarks on memoir of Noble and Abel on the combustion of gunpowder (abst.), 1, 401 : Remarks on communication of A. Wurtz on chloral hydrate (abst.), 1, 402 : Thermochemical data (abst.), 2, 88 : Epichlorhydrin (abst.), 2, 93 : Persulphuric acid ; its formation by electrolysis (abst.), 2, 362 : Heat of formation of persulphuric acid (abst.), 2, 363 : Decomposition of hydrogen peroxide in presence of alkalies, and on derivatives of barium dioxide (abst.), 2, 365 : Chemical stability of matter under the influence of sonorous vibrations (abst.), 2, 433 : Heat of formation of ammonia (abst.), 2, 433 : Heat of formation of oxides of nitrogen (abst.), 2, 433 : Double salts formed by haloid mercury salts (abst.), 4, 208 : Double salts of mercury (abst.), 4, 231, 232 : Decomposition of haloid mercury salts, etc. (abst.), 4, 233, 234 : Haloid salts of silver and potassium (abst.), 4, 235 : Union of free hydrogen with ethylene (abst.), 4, 235 : Transformation of carbon oxy sulphide into urea and thiourea (abst.), 4, 236 : Absorption of gases by platinum (abst.), 4, 239 : Electrolysis of hydrogen dioxide (abst.), 4, 240 : Thermochemistry of lead iodide (abst.), 5, 120 : Remarks on thermochemical results (abst.), 6, 34 : Heat of formation of fluorides (abst.), 6, 74 : On Faraday's law (abst.), 6, 156 : Rate of propagation of detonation in solid and liquid explosives (abst.), 7, 93 : On the principle of maximum work (abst.), 7, 138 : Thermochemical data on phenols (abst.), 8, 34 : Fixation of atmospheric nitrogen by argillaceous soils (abst.), 8, 18 : Contributions to a knowledge of sulphur and mercury (abst.), 8, 20 : Researches on antimony sulphide (abst.), 9, 5 : Direct fixation of nitrogen of the air by vegetable soils (abst.), 10, 12 : Researches on drainage (abst.), 10, 12 : Note on

mellitose (abst.), 12, 71 : Fixation of atmospheric nitrogen by plants (abst.), - - - - - 12, 72

BERTHELOT, M., and (G.) André. On carbonates in living plants (abst.), 8, 21 : Determination of oxalic acid in vegetable matter (abst.), 8, 37 : Relations between the formation of oxalic acid in plants and of albuminoid matter (abst.), 9, 7 : Displacement of ammonia by magnesia (abst.), 9, 99 : On the nitrogenous principles of vegetable soil (abst.), 9, 104 : Decomposition of amines (abst.), 9, 104 : Researches on the emission of ammonia by vegetable soils (abst.), - - - - - 10, 12

BERTHELOT, M., and C. Fabre. On the different forms of tellurium (abst.), 10, 10 : Heat of formation of hydrotelluric acid (abst.), 10, 10

BERTHELOT, M., and M. Guntz. Absorption of chlorine by carbon, and (on its) combination with hydrogen (abst.), - - - - - 7, 148

BERTHELOT, M., and L. Illosvay. Double salts prepared by fusion (abst.), - - - - - 4, 239

BERTHELOT, M., W. Louguinine, and A. Recoura. Calorimetric measurements (abst.), - - - - - 10, 15

BERTHELOT, M., and P. Vieille. New method of measuring the heat of combustion of carbon, etc. (abst.), 7, 146 : Heat of combustion of solid hydrocarbons and sugars (abst.), - - - - - 9, 112

BERTHELOT, M., and E. Werner. Heat of neutralization of polyhydroic phenols (abst.), 7, 119 : Heat of neutralization of hydroxybenzoic acids (abst.), 8, 21 : On the hydroxybenzoic acids, and their heat of formation and transformation (abst.), - - - - - 8, 22

BERTRAND, A. Volumetric determination of active oxygen in barium dioxide and oxygenated water (abst.), 2, 132 : Reactions of titanium tetrachloride, stannic chloride, and antimonic chloride on acetic acid and acetic anhydride (abst.), 2, 363 : Compound of titanium tetrachloride with acetyl chloride (abst.), 2, 430 : Combination of titanium tetrachloride with phosphorus trichloride (abst.) 2, 434 : Reduction of ethyl nitrate by alcohol (abst.), 2, 434 : Compound of titanium tetrachloride with ethyl oxide (abst.), 2, 434

BETTEL, W. Estimation of organic nitrogen in waters, beers, etc. (abst.), - - - - - 4, 162

BETTENDORFF, A. Detection of sodium phosphate in glacial phosphoric acid (abst.), - - - - - 10, 66

BETZ. Sensitiveness of silver bromide to light (abst.), - - - - - 6, 128

BEUTELL, A., and F. W. Dafert. A burette without graduations (abst.), 9, 17

BEVAN, E. J. See Cross, C. F.: See also Green, A. G.

BEYER, C. A quinoline homologue (abst.), - - - - - 7, 145

BIDAUX, R. See Guyot, P.

BIDET, A. Continuous preparation of oxygen (abst.), - - - - - 8, 21

BIECHELE, M. Criterion of purity of spices (abst.), - - - - - 1, 570

BIGELOW, W. D. Coloring-matter in California red wines, 17, 213 : Index to literature on the detection and estimation of fusel oil, 18, 397

BIGELOW, W. D., and C. C. Hamilton. Influence of alum, aluminum

hydroxide and aluminum phosphate, on the digestibility of bread, 16, 587

BIGELOW, W. D., and K. P. McElroy. Estimation of sugars in condensed milk, - - - - - 15, 668

BIGELOW, W. D. See also Wiley, H. W.

BILLITZ, G., and K. Heumann. Preparation of pyrosulphuryl chloride and chlorosulphonic acid (abst.), - - - - - 5, 126

BINDER, F. See Fittig, R.

BINDER, O. Water analysis (abst.), - - - - - 9, 219

BINZ, C., and H. Schulz. Chemical cause of the poisonous nature of arsenic - - - - - 2, 115

BIRNBAUM, K., and H. Reinherz. Action of iodine on the silver salts of some aromatic acids (abst.), - - - - - 4, 264

BISCHLER, A. Condensation products from *p*-toluidine and *p*-nitrobenzaldehyde (abst.), - - - - - 10, 41

BISCHOF, A. See Liebermann, C.

BISCHOF, G. Colorimetric determination of traces of lead (abst.), 1, 87

BISCHOF, O. See Wallach, O.

BISCHOFF, C. See Weyl, T.

BISHOP, H. A. Hydrogen sulphide generator, - - - - - 16, 48

BLADIN, J. A. Action of cyanogen on the toluidines (abst.), 6, 38 : On cyanogen compounds of the aromatic *o*-diamines (abst.), - - - - - 7, 245

BLAIR, A. A. Determination of carbon in steel, 18, 223 : Determination of sulphur in pig iron, - - - - - 19, 114

BLAIR, A. A., and J. E. Whitfield. Ammonium phosphomolybdate and the reducing action of zinc, - - - - - 17, 747

BLANK, A. See L. Knorr.

BLAREZ, C. Acidimetric determination of sulphurous acid, etc. (abst.), - - - - - 8, 180

BLAS, C. Detection of salicylic acid in beer (abst.), - - - - - 1, 294

BLASDALE, W. C. Properties of some California oils, - - - - - 17, 935

BLEUNARD, A. Action of trimethylamine on carbon disulphide (abst.), - - - - - 1, 294

BLEUNARD, A., and G. Vrau. Action of iodine on naphthalene at a high temperature (abst.), - - - - - 4, 232

BLINKS, W. M. See Noyes, W. A.

BLOCHMANN, R. Concentration of reagents (abst.), - - - - - 12, 175

BLOMÉN, J. E. Some practical points in the manufacture of nitroglycerol, 17, 263: Manufacture of soluble nitrocellulose for nitrogelatine and plastic dynamites, 17, 411 : See also Krug, W. H.

BLONDONNEAU, L. Determination of water in starch (abst.), - - - - - 6, 137

BLOXAM, C. L. Identification of minute quantities of silver cyanide (abst.), 5, 245 : Estimation of manganese in cast iron and spiegel (abst.), - - - - - 6, 242

BLOXAM, W. P. See Thomson, J. M.

BLUM, L. Direct separation of manganese from iron (abst.), 9, 10 : Determination of aluminum in the presence of iron and phosphoric acid (abst.), 10, 66 : Determination of sulphur in coke

(abst.), 10, 155 : Adulteration of Thomas slag (abst.), - - - 12, 413
 BLYTH, A. W. Detection of alum in bread (abst.), - - - 4, 188
 BOCKAIRY, P. Detections of falsification in butter (abst.), - - - 10, 87
 BOCKLISCH, O. Ptomaines from putrefying fish (abst.), - - - 7, 175
 BODEWIG, C. Estimation of boric acid in borosilicates (abst.), 6, 239;
 See also La Coste, W.
 BODLÄNDER, G., and J. Traube. Limits of fusel oil in spirituous liquors (abst.), - - - - - 9, 17
 BODMER, R. See Stokes, A. W.
 BÖRCK, G. de. See Spring W.
 BÖCKMANN, E. To cut glass tubing, etc. (abst.), - - - - - 9, 10
 BÖCKMANN, F. Determination of sulphur in pyrites (abst.), - - - 4, 161
 BÖHMER, C. Absorbents for nitric oxide (abst.), - - - - - 4, 160
 BÖHRINGER, C. See Forst, C.
 BÖRNSTEIN, E. Oxidation of glycerol in an alkaline solution, and preparation of pure glyceric acid (abst.), - - - - - 8, 64
 BÖTTINGER, C. Contribution to history of glyoxylic acid (abst.), 1, 395 : Contribution to knowledge of pyroracemic acid (abst.), 2, 53 : Pyridine derivatives (abst.), 6, 83 : Pyridine compounds obtained by condensation (abst.), 6, 83 : Behavior of pyrotartaric acid with bromine (abst.), - - - - - 6, 308
 BOGERT, M. T. Preparation of heptyl thiocyanate, 18, (75) : Charles Edwards Colby (obituary) - - - - - 20, 139
 BOGGS, T. R. See Herty, C. H.
 BOHLIG, E. Modes of combination of elements indicated in water analysis (abst.), 1, 336: New method of determining chlorine volumetrically (abst.), - - - - - 7, 209
 BOISBAUDRAN, Lecoq de. See Lecoq de Boisbaudran, P. E.
 BOISSIEU, P. de. On the water of crystallization of alums (abst.), 9, 100 : Preparation of tetraphenylethylene (abst.), 10, 81; Methyl-iodoform (abst.), - - - - - 10, 114
 BOKORNY, T. See Loew, O.
 BOLLERT, A. See Lieberman, C.
 BOLTON, H. C. Exhibition of alchemical medals, 13, 30: Experimental chemistry in the eighteenth century (title of a lecture), 13, 262 ; International index to chemical literature, 15, 574 : Early American chemical societies, 19, 717 : Two British patents—"Getting Gold from Wheat," and "Divining the Presence of Precious Metals," - - - - - 19, (23)
 BONDZYNSKI, S., and H. Rufi. Butter fat (abst.), - - - - - 12, 118
 BONG, G. Decomposition of silicates by fusion with litharge (abst.), 1, 334
 BOOT, J. C. A new form of pyknometer, - - - - - 19, 61
 BOOTH, J. C. A general method of toughening gold in the melting crucible, 6, 182, 210 : Manufacture of graphite crucibles, 6, 283 ; 7, 4 : Smelting furnace of the United States mint, - - - - - 7, 159
 BORDEN, J. L. See Wood, J.
 BORDET, L. See Bardy, C.

BORGmann, E. Determination of glycerol in sweet wines (abst.), 4, 191 : Examination of spices (abst.), 10, 70 : See also Fresenius, R.

BORICKY, E. Microchemical analysis of minerals and rocks (abst.), 1, 95

BORNRÄGER, A. Determination of potassium acid tartrate in lees, etc. (abst.), 9, 120 : Criticism of the direct methods for determining tartaric acid in lees, argols, etc. (abst.), 10, 23 ; Examination of alcohol (abst.), 12, 118, 119 ; Reactions of resorcinol and thymol (abst.), - - - - - 12, 502

BOSSHARD, E. Determination of nitrogen by the Kjeldahl method (abst.), - - - - - 7, 179

BOTHAMLEY, C. H., and G. R. Thompson. Estimation of chlorates by the zinc-copper couple (abst.), - - - - - 10, 26

BOTT, W. The three isomeric pyrocresols (abst.), - - - - - 9, 195

BOTTOMLEY, J. Source of error in colorimetry (abst.), - - - - - 1, 379

BOUCHARDAT, G., and J. Lafont. On lemon oil (abst.), 7, 247: Action of acetic acid on French oil of turpentine (abst.), 8, 71 : Transformation of oil of turpentine into optically active terpilene (abst.), 8, 72 : New synthesis of an inactive borneol (abst.), 8, 73 : Synthesis of an inactive terpilenol (abst.), 8, 183 : Active camphenol and ethylborneol (abst.), 9, 114 : Transformation of terpilenol into a menthenol (abst.), - - - - - 10, 191

BOUILHON, E. Detection of fuchsine in wine (abst.), - - - - - 1, 575

BOURCART, R. Action of ammonia upon anthraquinonesulphonic acid (abst.), 2, 365: Printing of natural indigo on calico (abst.), 6, 104: The dyeing properties of anthragalloy (abst.), - - - - - 6, 142

BOURGEOIS, L. Manufacture of crystallized barium chromate (abst.), 1, 279 : On crystallized barium and strontium titanates (abst.), 8, 178 : Methods for preparation of crystallized carbonates (abst.), 9, 33 : Preparation of crystallized neutral lead chromate (abst.), 9, 110 : Reproduction of celestine and anglesite by the wet process (abst.), 10, 113 : See also Sprung, W., and Verneuil, A.

BOURGOIN, E. Curve of solubility of salicylic and benzoic acids (abst.), 1, 272 : Bromcitraconic acid (abst.), 1, 280 : Elimination of bromine from bromcitraconic acid, and on a new organic acid (abst.), 2, 88 : Solubility of benzoic and salicylic acids (abst.), 2, 88 : Electrolysis of malonic acid (abst.), 2, 431 : Preparation of malonic acid (abst.), 2, 435 : Action of potassium cyanide on potassium trichloracetate (abst.), - - - - - 4, 231

BOUGOUGNON, A. Pennsylvania petroleum, P. 1, 91: Determination of naphtha in crude petroleum, P. 1, 119 : Areometers, P. 1, 2, 40, 48 : Petroleum and its examination, 1, 188: Analyses of calculi, etc., 4, 215 : Michel Eugène Chevreul (eulogy), 11, 71 : On the reaction of hydrogen peroxide with potassium permanganate in the presence of sulphuric acid, 11, 94 : The commercial manufacture of hydrogen dioxide and its applications, 12, 64 : On condensed milk, 13, 160 : Early mention of areometers, 13, 252: Application of graphic methods in certain chemical studies, - - - - - 14, 128

BOURGOUGNON, A., and J. A. Mandel. Ohio petroleum, - - - - 13, 168

BOUTY, E. Electrical conductivity of dilute salt solutions (abst.), - - - - 6, 125

BOVET, V. Antiseptic qualities of pyrogallol (abst.), - - - - 1, 497

BOWEN, H. C. The penetration machine; an explanation, - - - - 17, 218

BOWER, H. Chemical Industry of the United States, - - - - 15, 563

BOWMAN, J. W. See Mason, W. P.

BOYER, C. S. Accuracy of the dyeing test, 17, 468: Interpretation of results in analysis of extracts of fustic, - - - - 17, 518

BRADBURY, R. H. Reaction between molybdic acid and potassium chromate, - - - - 16, 565

BRAND, A. Use of bromine for decomposing sulphides (abst.), 9, 35: Use of double pyrophosphates in electrolytic separations (abst.), 12, 168

BRASS, W. See Wallach, O.

BRAUNER, B. On didymium (abst.), 4, 240: Contributions to chemistry of the cerite metals (abst.), 4, 169, 176; 5, 113: Atomic weight of tellurium (abst.), - - - - 6, 129

BRAUNER, B., and F. Tomicek. Action of hydrogen sulphide on arsenic acid (abst.), - - - - 10, 11

BREGOWSKY, I. M. See Ford, A. P.

BREMER, G. J. W. Splitting up of inactive malic acid (abst.), - - - - 2, 369

BRENEMAN, A. A. Review of industrial chemistry, 4, 72: New device for the determination of carbon in cast iron, 5, 56: Apparatus for rapid gas analysis, 5, 76: Tubes of colored glass for Nesslerizing, 6, 121: Analysis of a mineral water, 6, 123: Contributions to the study of the New York water supply, 8, 3: Examination of Croton water, 8, 157: Necessity of standard conditions in the application of Wanklyn's method of water analysis, 8, 221: Note on a sample of old butter, 9, 3: On the fixation of atmospheric nitrogen, 11, 2, 31: On the alleged sterilization of river water by mine water, 12, 12: Lecture experiments, 12, 48: Editorial, 12, 4: Notes on water analysis by the ammonia method, with some new apparatus, 12, 457: Improved burette holder, 14, 15: A remarkable water for public use, - - - - 14, 34

BROADHURST, W. H. See Austen, P. T.

BROESICKE, G. Staining microscopic preparations (abst.), - - - - 1, 584

BRONNER, G. Cupellation as a lecture experiment (abst.), - - - - 1, 90

BROOCKMANN, K., and K. Polstorff. Action of potassium permanganate on morphine (abst.), 2, 98: Action of air on morphine in ammoniacal solution (abst.), 2, 98: Methylmorphine hydroxide, 2, 98: Schützenberger's oxymorphone (abst.), - - - - 2, 98

BROWN, F. D. Value of different method of fractional distillation (abst.) - - - - 2, 345

BROWN, W. L. New form of gas assay furnace (abst.), - - - - 6, 244

BRÜGELMANN, G. Conversion of thiosulphates into sulphates by means of permanganate (abst.), - - - - 6, 96

BRÜHL, J. W. Limits of application of methods of vapor density estimation in barometric vacuum (abst.), 1, 292: Limits to employment of method of determining vapor-densities in barometric

vacuum (abst.), 1, 380 : New process for purification of mercury, 1, 292, 377, 378 : Preparation of divaleryl (abst.), 1, 397 : Relations between physical properties and chemical constitution, etc., 2, 118

BRÜHL, J. W., and V. Zenger. See Wiedemann, G. H.

BRUGNATELLI, T. Rapid evaporation of liquids (abst.), - - - 1, 90

BRUHN, G. Adenine and hypoxanthine (abst.), - - - 12, 161

BRUNCK, H., and C. Graebe. Soluble alizarin blue (abst.), - - - 5, 51

BRUNEAU, B. See Rousseau, G.

BRUNNER, H. Preparation of coloring-matters by action of aromatic nitrosubstitution products on phenols, etc. (abst.), - - - 4, 205

BRUNNER, H., and E. Chuard. β -Amidoalizarin (abst.), - - - 7, 229

BRUNNER, H., and W. Robert. On phenol dyestuffs (abst.), - - - 7, 229

BRUNTON, T. L. Physiological action of brucine and bromostrychnine (abst.), - - - 7, 116

BRUSE, C. F. A new gas (etherion), - - - 20, 899

BRUSH, G. J., and E. S. Dana. Two new mineral species (abst.), - - 1, 392

BRYANT, A. P. Separating phosphoric acid derived from bone from that derived from rock phosphate, 18, 491 : See also Day, W. C.

BUCHANAN, J. See Mills, E. J.

BUCHNER, M. Adulteration of beeswax (abst.), - - - 1, 361

BÜCHNER, E. W. Contributions to the history of ultramarine (abst.), 1, 395

BUISINE, A. Composition of suint (abst.), 8, 185 : Transformation produced in suint waters (abst.), 8, 203 : Volatile acids of suint (abst.), 9, 173 : See also Duvillier, E.

BUJARD, A. See Klinger, A.

BUNGEKNER, H. Bitter principles of hops (abst.), - - - 8, 97

BUNSEN, R. W. Separation of antimony from arsenic (abst.), - - 1, 332

BURR, H. C. See Smith, E. F.

BUSH, C. S. Degas, - - - - - 16, 535

BYK, S. Desulphurization of guanidine thiocyanate (abst.), - - 2, 134

BYLERT, A. van. Quantitative determination of antimony by Marsh's test (abst.), - - - - - 12, 476

CADV, H. P., and A. P. Ruediger. Modification of the permanganate method for determination of iron, - - - - - 19, 575

CAHOURS, A., and E. Demarçay. Stannobutyl and stannoamyl iodides (abst.), 1, 399 : Decomposition of fatty acids by superheated steam (abst.), 1, 403 : Formation of sebacic and suberic acids from crude fatty acids, etc. (abst.), - - - - - 4, 233

CAILLETER, L. Compressibility of gases (abst.), 1, 172 : Ethylene for production of low temperatures (abst.), - - - - - 4, 238

CAILLOL DE PONCY, O., and C. Livon. Chronic poisoning by antimony (abst.), - - - - - 5, 118

CAIRNS, F. A. Determination of phosphorus in pig iron by means of molybdic acid, - - - - - P. 1, 167

CALDWELL, G. C. New laboratory stand, 13, 102 : Porcelain Gooch crucible, 13, 105 : New form of voltameter, 13, 207 : The more notable events in the progress in agricultural chemistry since

1870, 14, 83: The American chemist (Presidential address), 14, 331
 CALDWELL, G. C., and S. W. Parr. De Fecamp's method for determination of fat in milk (abst.), 8, 61
 CALM, A. Transformation of α - and β -naphthol into amido-naphthalenes (abst.), 4, 270
 CAMERON, C. A. Determination of lead as iodate (abst.), 1, 535
 CAMERON, F. K. The benzoyl ester of acethydroxamic acid, 20, (72)
 CAMERON, F. K., and H. A. Holly. Acetone-chloroform, 20, (71)
 CAMERON, F. K., and E. F. Thayer. Boiling-point curve for benzene-alcohol solutions, 20, (72)
 CAMPBELL, A. See Gomberg, M.
 CAMPBELL, E. D. Determination of nickel in nickel steel, 16, 96: Allowable differences and probable limits of accuracy in analyses, etc., 18, 35: Thermochemical study of iron and steel; a correction, 20, 78
 CAMPBELL, E. D., and W. H. Andrews. Determination of nickel in nickel-steel, 17, 125
 CAMPBELL, E. D., and S. C. Babcock. Further study on the solubility of phosphorus in steel, 19, 786
 CAMPBELL, E. D., and E. C. Champion. Electrolytic determination of tin in tin ores, 20, 687
 CAMPBELL, E. D., and W. E. Hartman. Influence of silicon upon the heat of solution of cast irons, 20, 690
 CAMPBELL, E. D., and F. Thompson. Preliminary thermochemical study of iron and steel, 19, 754
 CAMPBELL, H. D. See also Howe, J. L.
 CAMPBELL, G. F. See Osborne, T. B.
 CANTOR, M. See Benedikt, R.
 CAPPELL, E. Spectrum of calcium (abst.), 1, 583
 CARETTE, H. Oxidation of sebacic acid (abst.), 8, 28, 56, 87: Oxidation of fatty acids (abst.), 8, 184
 CARNELLEY, T. Action of heat on mercuric chloride (abst.), 4, 225
 CARNELLEY, T., and W. Frew. Corrosion of leaden water pipes (abst.), 9, 221
 CARNELLEY, T., and J. Walker. Dehydration of metallic hydroxides by heat (abst.), 9, 189
 CARNOT, A. Volumetric determination of potassium (abst.), 1, 333: Use of hydrogen sulphide in the dry way (abst.), 1, 489, 536: Determination of chromium (abst.), 4, 166: Successive separation of copper, cadmium, and zinc, from nickel and cobalt, etc. (abst.), 8, 277: Separation of antimony and tin (abst.), 9, 11: Separation of arsenic, antimony, and tin (abst.), 9, 11: Use of hydrogen dioxide for the determination of metals of the iron group (abst.), 10, 192: Separation of lithium as fluoride (abst.), 10, 193
 CARO, H. See Graebe, C.
 CARPENTER, W. L. On the solidification of fatty oils (abst.), 6, 198
 CARR, O. The predominant organic acid in sorghum juice, 15, 144:

Modification of Knorr's extraction apparatus, - - - - - 16, 868

CASALI, A. Reaction for glycocholic acid; detection of gall in urine (abst.), - - - - - 1, 105

CASAMAJOR, P. Amalgamation of iron and of other metals, P. 1, 49: Estimation of potassium as acid tartrate, P. 1, 98; A new portable burette, P. 1, 159: A new mounted burette, P. 1, 181: Corrections due to variations of temperature, P. 1, 188: Areometers, P. 1, 2, 8, 19: Connection between electricity and the motions of camphor on water, P. 1, 2, 66: Contributions to blowpipe chemistry, P. 2, 29, 78, 103; Verification of graduated glass vessels and areometers from 4° to 45°, P. 2, 128: Influence of temperature on polarization of inverted sugar, 1, 26: Report on Berzelius medal, 1, 132: Rapid estimation of pure sugar, 1, 205: Action of bone-black on solutions of pure sugar, 1, 468: Detection of starch sugar mechanically mixed with cane-sugar, 2, 111, 428: Note on sulphuretted hydrogen, 3, 30: Detection of oleomargarine, 3, 83: Detection of starch-sugar syrup mixed with sugar-house molasses, 3, 87: Table for correction of saccharimetric tests by inversion, 3, 89: New filtering apparatus, 3, 125: Analysis of beet root and sorghum cane, 3, 151: Volumetric estimation of copper and of lead, 4, 35: Note on asbestos filters, 4, 248: Detection of anhydrous glucose mixed with refined cane-sugar, 5, 41: Note on camphor motions, 7, 13: Singular process of sugar analysis, 7, 42: Two new filters and a new aspirator, 7, 104: Silver iodide as a blowpipe reagent, 7, 132: Platinum filtering bulb for Carmichael's system of filtration, - - - - - 8, 17

CASTHÉLAZ, J. Fraud in tartar emetics (abst.), - - - - - 6, 37

CATLIN, C. A. Improved apparatus for volumetric determination of carbon dioxide and other gases, - - - - - 15, 614

CAUSSE, H. Action of ethyl aldehyde on resorcinol (abst.), - - - - - 9, 34

CAVENTOU, E., and C. Girard. Action of sulphuric acid on cinchonine in the presence of oxalic acid (abst.), - - - - - 10, 83

CAZENEUVE, P. Determination of glucose in blood (abst.), 1, 350: Oxidation of formic and oxalic acids, etc. (abst.), 1, 490: Camphor dichloride (abst.), 4, 233: Formation of acetylene at the expense of iodiform (abst.), 6, 37: Isomerism of chloronitrated camphor (abst.), 6, 131: Detection and determination of fuchsine in wines (abst.), 7, 294: Examination of wines for fuchsine, etc. (abst.), 8, 57: Detection of orange and yellow colors in wines (abst.), 8, 80: Detection of artificial red coloring-matter in wines (abst.), 8, 81: Camphonitrophenol, isomeric with nitro-camphor (abst.), - - - - - 12, 71

CHAMOT, E. M. See Dennis, L. M.

CHAMPION, E. C. See Campbell, E. D.

CHANCE, A. M. Recovery of sulphur from alkali waste (abst.), 10, 90

CHANCEL, G. Systematic course for detection of coloring-matters

in wines (abst.), 1, 576 : Nitro-acids derived from ketones (abst.) - - - - - 4, 208

CHANDLER, C. F., and E. Waller. Analysis of mineral waters from Texas, - - - - - 11, 141

CHAPER, M. Presence of diamonds in a pegmatite from Hindustan (abst.), - - - - - 6, 105

CHAPIN, E. S. See Noyes, A. A.

CHAPMAN, E. J. Turner's reaction for boric acid (abst.), - - - - - 1, 528

CHAPOTEAUT, P. On the gastric juice (abst.), - - - - - 4, 242

CHAPPUIS, J. See Hautefeuille, P., and Vincent, C.

CHASTAING, P. Complex function of morphine; transformation into picric acid; solubility (abst.), 4, 76 : Researches on pilocarpine (abst.), 4, 78 : Action of acids on pilocarpine (abst.), - - - - - 4, 236

CHATARD, T. M. Estimation of alkalies in silicates (abst.), - - - - - 6, 312

CHATTAWAY, W. See Allen, A. H.

CHAUTARD, P. Detection of acetone in liquids, etc. (abst.), 8, 24 : See also Clermont, P. de.

CHAUVEAU, A. Preparation of attenuated cultivations of anthrax virus (abst.), 6, 78 : Heating of cultivations of *Bacillus anthracis* (abst.), - - - - - 6, 130

CHESNUT, V. K. Oil-like skin irritant from poisou ivy, 18, (81) : Poisonous honey, - - - - - 19, (10)

CHESTAKOFF, W. Substitution product of diallylcarbinol (abst.), 6, 136

CHRISTENSEN, O. T. The chromium and manganese compounds corresponding to potassium ferro- and ferricyanide (abst.), - - - - - 7, 140

CHRISTOMANOS, A. C. Specific gravity of iodine trichloride (abst.), 1, 90 : New apparatus for determination of melting-point (abst.), - - - - - 12, 226

CHUARD, E. See Brunner, H.

CHURCH, A. H. Vegetable albinism; respiration and transpiration of albino foliage (abst.), - - - - - 2, 342

CIAMICIAN, G. L. Effect of pressure and temperature on spectra of gases (abst.), - - - - - 1, 93

CIAMICIAN, G. L., and M. Dennstedt. Action of cyanogen chloride on potassium-pyrrol (abst.), 5, 64 : Action of acetic anhydride and benzoic anhydride on pyrrol (abst.), - - - - - 7, 84

CIAMICIAN, G. L. and P. Silber. On the synthesis of pyrocoll (abst.), 6, 86 : A blue dye-stuff from pyrrol (abst.), - - - - - 6, 161

CIAMICIAN, G. L. See also Weidel, H.

CLAESSON, P. Normal and acid methyl and ethyl sulphates (abst.), 1, 492 : Sulphates of polyhydric alcohols and carbohydrates (abst.), - - - - - 2, 288

CLAISEN, L. Color reaction for phenylglyoxylic acid (abst.), - - - - - 1, 543

CLAISEN, L., and F. E. Matthews. Action of haloid acids on hydrocyanic acid (abst.), 4, 221 : Combinations of hydrocyanic acid with hydrochloric and hydrobromic acids (abst.), - - - - - 5, 67

CLAPARÈDE, A., and W. Smith. By-product in the manufacture

of aurin (abst.), - - - - - 5, 234

CLARK, E. Method of determining chromium in chrome ore, 17, 327

CLARK, N. D. Crystallization of potassium and cesium ruthenium nitrosochlorides, - - - - - 16, 395

CLARKE, F. W. Electrolytic estimation of mercury (abst.), 1, 99 : Fractional analysis of silicates, 13, 277 : Constitution of lithia micas, 15, 245 : Reports of the committee on determinations of atomic weights, 16, 179; 17, 201; 18, 197; 19, 359; 20, 163 : Alkaline reaction of some natural silicates, - - - - - 20, 739

CLARKE, F. W., and E. A. Schneider. Chemical constitution of talc (abst.), - - - - - 12, 351

CLARKE, F. W. See also Beamer, M.

CLARKE, T. See Venable, F. P.

CLASSEN, A. Separation of ferric oxide and alumina from manganese (abst.), 1, 325 : Estimation of cobalt, nickel and zinc by precipitation as oxalates (abst.), 1, 327 : Separation of manganese from zinc (abst.), 1, 327 : New method of quantitative analysis (abst.), 1, 528 : Determination of the atomic weight of bismuth (abst.), - - - - - 12, 151

CLASSEN, A., and R. Ludwig. Quantitative analysis by electrolysis (abst.), - - - - - 8, 76

CLAUS, A. Synthesis of homologues of aniline, etc. (abst.), 4, 228 : Action of phosphorus pentachloride on acetyl- and benzoyl-diphenylamine (abst.), 4, 264 : Bases resulting from addition of quinoline and alkyl haloid salts (abst.), - - - - - 4, 265

CLAUS, A., and M. Dehne. Dichlornaphthalene and chlornaphthol from β -naphtholsulphonic acid (abst.), - - - - - 4, 229

CLAUS, A., and E. Istel. Tetrabromoquinoline and diiodoquinoline (abst.), - - - - - 5, 24

CLAUS, A., and H. Oehler. Action of phosphorus pentachloride on α -naphtholsulphonic acid (abst.), - - - - - 4, 228

CLAUSNIZER, F. Sulphur oxychlorides (abst.), - - - - - 2, 60

CLAYE, D. Examination of asphaltum (abst.), - - - - - 4, 196

CLERMONT, P. de. Action of ammonium salts on some metallic sulphides (abst.), - - - - - 1, 331, 388

CLERMONT, P. de, and P. Chautard. Oxidation of pyrogallol in presence of gum arabic (abst.), - - - - - 4, 237

CLERMONT, P., and J. Frommel. Formation of aurin (abst.), 1, 386 : Observations on sulphurous baths (abst.), - - - - - 1, 389

CLEVE, P. T. Chlorostannates of rare earths (abst.), 1, 278 : On scandium (abst.), 1, 389 : Note on didymium (abst.), 4, 240 : Remarks on didymium (abst.), 4, 240 : On samarium and its compounds (abst.), - - - - - 5, 234

COALE, R. D. See Remsen, I.

COATES, C. E., and W. R. Dodson. Nitrogen assimilation in the cotton plant, - - - - - 18, 425

COCHIN, D. Non-existence of soluble alcoholic ferment (abst.), - - - - - 1, 403

COCHRAN, C. B. Study of comparative composition of milk, skim milk and whey, 15, 347: Detection of foreign fats in lard and butter, - - - - - 19, 796

CODA, D. Estimation of zinc in its ores (abst.), - - - - - 12, 502

COLLIER, P. Analysis of a mineral resembling thorite, 2, 73; Development of sugar in the sorghums, - - - - - 2, 75

COLLIN, A. See Nöltig, E.

COLORIANO, [M]. Analysis of staurotide (abst.), 7, 294: Conditions of formation of two arseniates of nickel and on their constitution (abst.), 8, 49: A basic copper arseniate (abst.), 8, 164: Researches on a few crystallized arseniates (abst.), - - - - - 8, 165

COLSON, A. Determination of sulphur in natural sulphides (abst.), 1, 487, 540: Reversion of phosphates soluble in citric acid (abst.), 2, 133: Manufacture of phosphoric acid (abst.), 2, 434: New compounds of carbon and silicon (abst.), 4, 237: Action of carbon disulphide on silicon (abst.), 4, 240: Some connections between chemistry and physics (abst.), 8, 178: Derivatives of hexamethylbenzene and of durene (abst.), 8, 182: A base derived from diquinoline (abst.), - - - - - 10, 190

COLSON, A., and H. Gautier. Some derivatives of xylene (abst.), 8, 96

COLSON, A. See also Schützenberger, P.

COMBES, A. On the compound NH_2 (abst.), 4, 240: Action of chlorinated aldehydes on benzene (abst.), 6, 165: Derivatives of acetylacetone (abst.), 9, 171: New reaction of aluminum chloride (abst.), 9, 172: Homologues of acetylacetone, etc. (abst.), - - - - - 10, 14

COMEY, A. M. Ethanediquinolylene (abst.), - - - - - 12, 232

COMSTOCK, W. J. Analysis of tetrahedrite from Peru (abst.), 1, 393

CONE, E. F. Estimation of pyrrhotite in pyrites ores, - - - - - 18, 404

CONINCK. See Oechsner de Coninck.

CONRAD, E. C. See Griffiths, A. B.

CONRAD, M., and M. Guthzeit. Chloromalonic acid and derivatives (abst.), - - - - - 4, 270

COOK, A. D. Method of preparing a strictly neutral ammonium citrate solution, - - - - - 20, 585

COOPER, W. J. See Wanklyn, J. A.

COPPET, L. C. de. Heat evolved on mixing anhydrous sodium sulphate with water (abst.), - - - - - 1, 395

CORNWALL, H. B. Kerosene oil, P. 1, 71: Analysis of potable waters, P. 1, 201: Methods of butter analysis (abst.), - - - - - 8, 28

COSSA, A. Serpentine of Venayes (Vallée d'Aoste) (abst.), - - - - - 1, 275

COWPER, R. Solubility of glass in certain reagents (abst.), 4, 219: Analysis of oxidized iron from condenser (abst.), 4, 219: Action of chlorine on certain metals (abst.), - - - - - 5, 99

COWPER, R., and V. B. Lewes. Oxidation of phosphorus at a low temperature, and the alleged decomposition of phosphorous anhydride by sunlight (abst.), - - - - - 6, 44

CRAFTS, J. M. See Ador, E., and Friedel, C.

CRAMPTON, C. A. Glucose in butter, - - - - - 20, 201

CRAVER, H. W. See Noyes, W. A.

CRAWLEY, J. T. Spontaneous combustion of molasses, - - - 19, 538

CRESSNER. See Kressner.

CROBAUGH, F. L. Estimation of graphite in pig metal, - - - 16, 104

CROOK, W. G. Method of distinguishing butter from other fats (abst.), - - - - - 1, 568

CROOKES, W., W. Odling, and C. M. Tidy. Colorimeter for water analysis (abst.), - - - - - 4, 163

CROSS, C. F., and E. J. Bevan. Chemistry of bast fibers (abst.), 4, 169 : Apparatus for determination of melting-points (abst.), 4, 169 : On lignification (abst.), 5, 91 : Oxidation of cellulose (abst.), 5, 92 : On the oxidation of cellulose with special reference to bleaching and dyeing (abst.), 6, 197 : Combustion of carbohydrates by means of chromic acid (abst.), - - - 7, 293

CROSS, C. F., E. J. Bevan and C. Beadle. Furfural-yielding constituents of plants, 17, 286 : The natural oxycelluloses, 18, 8

CROSS, C. F., and A. Higgin. Reaction of chromic anhydride with sulphuric acid (abst.), - - - - - 4, 170

CROSS, C. F. See also Green, A. G.

CROSSMAN, T. The analysis of malt, - - - - - 16, 559

CUNDALL, J. T. See Ramsay, W., and Shenstone, W. A.

CURTIS, T. On hydrazoic acid (azoiimide) (abst.), - - - 12, 473

CURTIS, T., and R. Jay. Hydrazine from aldehyde-ammonia (abst.), - - - - - 12, 165

CURTMAN, C. O. Detection of salicylic acid (abst.), 9, 15 : Detection of aniline colors in wines, etc. (abst.), 9, 201 : On some of the arsenic tests of the U. S. Pharmacopoeia (1890), 16, 580 : On the hydration of calcium bromide and iodide, 16, 621 : On the quality of potassium iodide sold in the market as U. S. P., 16, 678

CUSHMAN, A. S., and J. Hayes-Campbell. Volumetric determination of lead, - - - - - 17, 901

CUSHMAN, B. S. See Dennis, L. M.

CZUMPELITZ. Color reactions of alkaloids (abst.), - - - - - 4, 193

DAFERT, F. W. See Beutell, A.

DAHL, T. A new metal (norwegium) (abst.), 1, 398 : Atomic weight of norwegium (abst.), - - - - - 1, 527

DAHM, G. Determination of alcohol in wine (abst.), - - - - - 1, 572

DAUChÉ and Villejean. On the toxic character of bismuth (abst.), 10, 77

DALE, R. S., and C. Schorlemmer. Aurin (abst.), 2, 51 : Phenolates of amido bases (abst.), - - - - - 5, 100

DALLES, B. Electrolytic determination of cadmium, 19, (26) : See also Avery, S.

DAL SIE, G. Active principle of insect powder (abst.), - - - - - 1, 390

DAMM, G., and L. Schreiner. Resorcinol dyestuffs (abst.), - - - 4, 268

DANA, E. S. See Brush, G. J.

DANILEWSKI, A. Studies of albuminoids (abst.) - - - - 6, 95

DANNENBERG, E. Determination of colchicine (abst.) - - - - 1, 106

DARTON, N. H. Modification of Mohr's burette, 3, 124 : Estimation of tannic acid in tanning materials, 4, 4 : Convenient form of weighing flask to deliver as a burette, 4, 6 : Comparative values of several methods of determining tannic acid, 4, 49, 62 : Ammonia process for water analysis - - - - 5, 104

DAVENPORT, B. F. Rapid filtration (abst.) - - - - 6, 49

DAVID, J. Separation of oleic acid from stearic acid (abst.), 1, 360 : Determination of glycerol in fats (abst.) - - - - 4, 239

DAVID, R. See Prunier, L.

DAVIDOFF, OLGA. Correspondence from Russian Chemical Society (abst.) - - - - 6, 77, 95, 128, 135, 157, 167

DAVIS, G. E. Hydrogen dioxide as a reagent in chemical analysis (abst.), 1, 335 : Determination of sulphide, sulphite and thiosulphate in a solution (abst.), 4, 160 : Determination of free and combined chlorine in gases escaping from chemical works (abst.), 4, 161 : The distillation of coal and recovery of hydrocarbons from the gas (abst.) - - - - 6, 27

DAVIS, G. W. See Smith, W.

DAVOLL, D. L., JR. Fallacies of post-mortem tests for morphine - 16, 799

DAVY, E. W. Reagent for phenol (abst.), 1, 339 : Test for nitrites in water (abst.) - - - - 4, 163

DAY, T. C. Estimation of nitrites, alone or in the presence of nitrates and chlorides (abst.) - - - - 10, 85

DAY, W. C., and A. P. Bryant. Note on Pemberton's method of phosphoric acid determination as compared, etc. - - - - 16, 282

DE BENNEVILLE, J. S. Laboratory notes, 16, 65 : Experiments on the analysis of pig copper, brasses, and bronzes, 16, 133 : Experiments on a ferrotungsten, 16, 297 : Some alloys of iron with molybdenum, tungsten, and chromium, as solutions, 16, 735 : Carbides of iron with chromium, molybdenum and tungsten, 17, 791 : Note on the separation of silicic and tungstic acids, - - - - 19, 377

DEBRAY, H. Reactions of mercuric chloride (abst.), 4, 238 : See also Deville, H. S.-C.

DE CHALMOT, G. Are pentoses formed by the assimilation process? 15, 618 : Silicides of iron, 17, 923 : See also Morehead, J. T.

DECHAN, M. On soaps (abst.) - - - - 8, 43

DECHAN, M., and T. Maben. Formation of basic salts in the saponification of fats and oils (abst.) - - - - 8, 41

DEERING, W. H. See Abel, Sir F.

DEFREN, G. Determination of reducing sugars in terms of cupric oxide, 18, 749 : See also Rolfe, G. W.

DEGENER, P. Volumetric estimation of phenol (abst.), 1, 581 : Action of fused alkalies on aromatic sulphonic acids (abst.) - - - - 2, 294

DEHÉRAIN, P. P., and L. Maquenne. Reduction of nitrates in soils (abst.) - - - - 5, 117, 118, 119

DRHNE, M. See Claus, A.

DEICHMÜLLER, A., F. Szymanski, and B. Tollens. β -Hydroxybutyric acid in diabetic urine (abst.), - - - - - 7, 177

DE KONINCK, L. L. Test for chlorides in presence of bromides and iodides (abst.), 7, 209 : Determination of carbon in iron (abst.), 10, 155 : New hydrogen sulphide generator specially adapted for use in analytical laboratories, - - - - - 16, 63

DE KONINCK, L. L., and A. Lecrenier. Separation of gold and platinum from arsenic, antimony, and tin (abst.), - - - - - 10, 156

DE KONINGH, L. Separation of solid and liquid fatty acids, 17, 740 : Estimation of boric acid in foods, 19, 55 : Note on the volatility of boric acid ; separation of boric from phosphoric acid ; estimation of boric acid in foods, 19, 385 : Estimation of mineral matter in rubber goods, 19, 952 : See also Muter, J.

DELACHANAL, B., and A. Mermet. Determination of sulphur in organic compounds ; a claim of priority (abst.), - - - - - 1, 487, 542

DELACHANAL, B. See Vincent, C.

DELACRE, M. Some chlorinated derivatives of ethyl acetate (abst.), 10, 17

DELAFONTAINE, M., and C. E. Linebarger. Reaction between carbon tetrachloride and the oxides of niobium and tantalum, - - - - - 18, 532

DE LAIRE, G., and F. Tiemann. Iridin, the glucoside of the iris root, - - - - - 15, 351, 400 : 16, 847

DELVAUX, G. Separation of nickel from cobalt (abst.), - - - - - 4, 166

DEMARÇAY, E. Citric acid and its homologues (abst.), 1, 173 : Preparation of acetonitrile (abst.), 2, 432 : Vaporization of metals *in vacuo* (abst.), 4, 242 : Color-reaction of rhodium (abst.), 8, 58 : See also Cahours, A.

DEMEL, W. Note on bodies combustible with difficulty (abst.), 4, 269 : The dopplerite of Aussee (abst.), - - - - - 5, 63

DEMOLE, E. Partial synthesis of sugar of milk, and contributions to the synthesis of cane-sugar (abst.), 2, 89 : Constitution of dibromethylene (abst.), - - - - - 2, 90

DEMSKI, H. See Morawski, T.

DEMUTH, R., and V. Meyer. Action of oxygen on zinc-ethyl (abst.), 12, 156 : Guinochet's isomeric carballylic acid (abst.), 12, 166 : Determination of vapor densities below the boiling-point (abst.), 12, 168

DENIGÈS, G. Distinction of phosphorus oxychloride from trichloride (abst.), - - - - - 12, 70

DENNIS, L. M. Gerhard Krüss (obituary), 17, 423 : Separation of thorium from the other rare earths by means of potassium trinitride, 18, 947 : New form of discharger for spark spectra of solutions, 20, 1

DENNIS, L. M., C. H. Benedict, and A. C. Gill. Salts of hydronitric acid, - - - - - 20, 225

DENNIS, L. M., and E. M. Chamot. Contributions to the chemistry of didymium, - - - - - 19, 799

DENNIS, L. M., and B. S. Cushman. On the analytical properties of iron phosphide and phosphate, - - - - - 16, 477

DENNIS, L. M., Martha Doan, and A. C. Gill. New compounds of thallium, - - - - - 18, 970

DENNIS, L. M., and C. G. Edgar. Comparison of various rapid methods for determining carbon dioxide and carbon monoxide, 19, 859

DENNIS, L. M., and W. H. Magee. Contributions to the chemistry of cerium, - - - - - 16, 649

DENNIS, L. M., and A. E. Spencer. Zirconium tetraiodide, - - - - - 18, 673

DENNSTEDT, M. Derivatives of β -bromaniline (abst.), 2, 224 : Crystallographic description of benzyl- α -thioformate (abst.), 2, 224 : See also Ciamician, G. L.

DENZEL, J. Chlorobromine and bromine substitution products of ethylene (abst.), 1, 248 : Nomenclature and boiling-points of chlorobromine and bromine substitution products of ethane and ethylene (abst.), - - - - - 1, 248

DÉON, P. H. See Horsin-Déon, P.

DE ROOIJ, R. Determination of phosphoric acid by the molybdic acid process, 17, 43 : Addition of calcium chloride in the determination of potash, 17, 46 : Preparation of ammonium citrate solution, 17, 47 : Determination of potash in kainite, 17, 85 : Oxidation of organic matter and decomposition of ammonium salts by aqua regia in determination of potash, - - - - - 17, 86

DERVIN, E. On the sulphides of phosphorus (abst.), - - - - - 6, 189

DESCAMPS, A. Preparation and properties of potassium cobaltocyanide and its derivatives (abst.), - - - - - 1, 272

DE SCHWEINITZ, E. A. Some cotton-seed analyses, 6, 216 : Importance of the study of biochemistry, 16, 261 : Convenient lamp for generating formaldehyde gas and acetic aldehyde, 19, (11) : Mineral constituents of tubercle bacilli, 20, 618, (66) : Convenient dropping bottle, 20, (4) : Pasteur milk laboratory at Washington, 20, (48)

DE SCHWEINITZ, E. A., and M. Dorset. Composition of the tuberculosis and glanders bacilli, 17, 605 : Fats contained in the tuberculosis bacilli, 18, 449 : Some products of the tuberculosis bacillus, - - - - - 19, 782

DE SCHWEINITZ, E. A., and J. A. Emery. Use of the calorimeter in detecting adulterations of butter and lard, 18, 174 : See also Schweinitz, E. A. von.

DESHAYES, V. Eggertz's method of determining carbon in iron and steel (abst.), 1, 271, 371 : Chemical composition and mechanical properties of steel (abst.), - - - - - 1, 278

DESI, E. D. Oxides of tungsten, - - - - - 19, 213

DEUTSCH, A. Ethers of tribasic formic acid (abst.), 1, 167 : See also Gabriel, S.

DEVILLE, H. S.-C., and H. Debray. Explosive alloys of zinc with platinum metals (abst.), - - - - - 4, 240

DEWAR, J. Manufacture of chlorine from magnesium chloride (abst.), 9, 224

DEWEY, F. P. Separation of tin from arsenic and antimony (abst.), 1, 483 : Accuracy of the commercial assay for silver, 16, 505 : Sul-

phuric acid process of refining lixiviation sulphides, 18, 643, (76):
 The actual accuracy of chemical analysis, - - - - - 18, 808, (88)

DICKMANN, F. Water analysis (abst.), - - - - - 12, 413

DIRCK, H. L. See Smith, E. F.

DIEHL, O. C. See Trowbridge, P. F.

DIETERICH, E. Solubility of opium alkaloids (abst.), - - - - - 9, 216

DIETZELL, B. E. Evolution of free nitrogen in fermentation (abst.), - - - - - 4, 267

DIETZELL, B. E., and M. G. Kressner. Determination of phosphoric acid in fish guano (abst.), - - - - - 1, 355

DIRVELL, P. J. Separation of gold and platinum from antimony, arsenic, and tin (abst.), - - - - - 8, 278

DITTE, A. Action of acid solutions on stannous oxide (abst.), 4, 234: Action of alkaline solutions on stannous oxide (abst.), 4, 235: Action of potassium hydroxide on lead oxide (abst.), 4, 237: Decomposition of lead salts by alkalies (abst.), 4, 237: Combinations of disulphide and diselenide of tin (abst.), 5, 117: Production of crystallized uranates (abst.), 5, 120: Combination of silver nitrate with alkaline nitrates (abst.), 8, 50: Carbonate of aniline (abst.), - - - - - 10, 114

DITTMAR, W. Disintegration of chrome iron ore (abst.), - - - - - 1, 104

DIVERS, E. Theory of the constitution of the fulminates (abst.), 6, 45: Origin of calcium thiosulphate (abst.), - - - - - 7, 28

DIVERS, E., and M. Kawakita. On the constitution of the fulminates (abst.), 6, 45: On Liebig's production of fulminating silver without the use of nitric acid (abst.), 6, 46: On hyponitrites (abst.), 6, 75: Decomposition of silver fulminate by hydrochloric acid (abst.), 6, 90

DIVERS, E., and T. Shimidzu. Magnesium hydrosulphide and its use as a source of hydrogen sulphide (abst.), 6, 311: Use of sulphuric acid in place of nitric acid to oxidize sulphides, etc. (abst.), - - - - - 7, 211

DIVERS, E., and M. Shimosé. New oxide of tellurium (abst.), 5, 115: Tellurium sulphoxide (abst.), 5, 116: New reaction of tellurium compounds (abst.), - - - - - 5, 116

DIXON, H. B., and H. W. Smith. Incompleteness of combustion in gaseous explosions (abst.), - - - - - 10, 179

DOAN, MARTHA. See Dennis, L. M.

DOBBIN, L. Estimation of caustic alkali in the presence of alkaline carbonates (abst.), - - - - - 10, 181

DODSON, W. R. See Coates, C. E.

DOEBNER, O. Combinations of benzotrichloride with aromatic bases (abst.), - - - - - 4, 207

DOELTER, C. Method of determining ferrous oxide in silicates (abst.), 1, 85

DOGIEL, J. Chemical theory of effects of arsenic (abst.), - - - - - 4, 268

DOHME, A. R. L., and H. Engelhardt. Chemistry of *Cascara sagrada*, 20, 534

DOOLITTLE, O. S. Torsion viscosimeter, 15, 173: Standardizing the torsion viscosimeter, - - - - - 15, 454

DOOLITTLE, O. S., and A. Eavenson. Notes and queries on Dudley's method of determining phosphorus in steel, - - - - - 16, 234

DONALD, G. See Mills, E. J.

DONATH, E. Method of detecting monochromates and free chromic acid in bichromates (abst.), 1, 89 : Tarry ingredients in commercial ammonia (abst.), - - - - - 1, 92

DONATH, E., and F. Müllner. Separation of stannic oxide from tungstic oxide (abst.), - - - - - 9, 200

DOREMUS, C. A. Contributions to the literature of milk analysis, P. 1, 227: Abnormal constituents of the blood due to leucocythemia, P. 1, 2, 29: Wilkinson's process for manufacture of illuminating gas from wood, 2, 449 : Composition of elephant's milk, 3, 55: 4, 157 : A simple apparatus for the rapid estimation of urea, 7, 72 : In rebuttal (reply to Dr. Greene's remarks), 7, 168 : Preparation of zirconia, 8, 91 : Fluorides as agents for softening hard water, 12, 303 : Post-mortem diffusion of arsenic, 13, 283 : Purification of boiler feed water, 15, 610 : Chemical history of a case of combined antimonial and arsenical poisoning, 17, 667 : Presence of oil in boiler scale, 18, 741 : Method of collecting and analyzing the gases in canned goods, - - - - - 19, 733

DORP, W. A. VAN. See Hoogewerff, S.

DORRANCE, J. T. See Noyes, A. A.

DORSET, M. See De Schweinitz, E. A.

DOTTO-SCRIBANI, F. Determination of nitric acid in lime-juice (abst.), - - - - - 1, 367

DRAGENDORFF, G. Brucine reaction with chromic acid (abst.), - - - - - 1, 100

DRALLE, C. Oxidation of purpurin (abst.), 7, 59 : On haematoxylin and brasilin (abst.), - - - - - 7, 60

DRAPER, J. W. Science in America (presidential address), - - - P. 1, 135

DRECHSEL, E. Precipitation of calcium carbonate (abst.), 1, 334 : Preparation of crystalline albumin compounds (abst.), 1, 494 : Electrolytic experiments (abst.), 2, 135 : Carbamidopalladious chloride (abst.), 2, 137 : Hypoxanthine, a product of decomposition of certain albuminoids (abst.), 2, 224 : Electrolysis of normal caproic acid with the alternating current (abst.), 8, 274 : Formation of urea from albumin (abst.), - - - - - 12, 475

DREWSSEN, V. See Baeyer, A.

DROWN, T. M. Pulverized zinc for reduction of iron (abst.), 1, 96 : Determination of silicon in pig iron and steel (abst.), 1, 285, 371 : Lewis Mills Norton, Ph.D. (obituary), - - - - - 15, 241

DROWN, T. M., and P. W. Shimer. Analysis of titaniferous iron ores (abst.), - - - - - 4, 164

DUBOIS, C., and L. Padé. Studies on fatty bodies (abst.), 7, 288 : Examination of fatty matters (abst.), - - - - - 8, 83

DUBOIS, H. W. See Mixer, C. T.

DUCLAUX, E. Gastric digestion (abst.), 4, 234 : Germination in soil rich in organic matters, but free from microbes (abst.), 7, 25 : Influence of sunlight on vitality of germs of microbes (abst.), 7, 77 : Studies on butter (abst.), 8, 107 : Rancidity of butter (abst.), - - - 8, 108

DUDLEY, C. B. Circular to iron and steel chemists on method of determining phosphorus, 16, 286 : Some present possibilities in the analysis of iron and steel (presidential address), 19, 93 : The dignity of analytical work (presidential address), - - - - - 20, 81

DUDLEY, C. B., and F. N. Pease. Standard methods for analysis of iron and steel, 15, 501 : An attempt to find the amount of phosphorus in three samples of steel, 16, 217 : Some points in the determination of phosphorus in steel by the volumetric method, 16, 224

DUDLEY, C. B. See also Noyes, W. A.

DUDLEY, W. L. Action of gaseous hydrochloric acid and oxygen on platinum metals, 15, 272 : Electro-deposition of iridium, method of maintaining the uniform composition of an electroplating bath, 15, 274 : Opening of the Kent Chemical Laboratory of the University of Chicago, 16, 213 : Relationship of heat of vaporization of gases to their density and also to their boiling-point, 17, 969 : Nickelo-nickelic hydrate, 18, 901 : A new volatile alkaloid, - - - - - 1, 286

DÜRKOPF, E., and H. Göttsch. A new lutidine (abst.), - - - - - 12, 233

DUGGAN, J. R. Determination of urea in urine (abst.), - - - - - 4, 196

DUISBERG, C. Formation of *p*-toluyl-*p*-methylimisatin from dichloroacetic acid and *p*-toluidine (abst.), - - - - - 7, 205

DULIN, R. S. Wet assay of copper, - - - - - 17, 346

DUMAS, J. B. Presence of oxygen in metallic silver (abst.), 1, 527 : Normal carbon dioxide in the atmosphere (abst.), - - - - - 4, 232

DUMREICHER, O. von. Action of aluminum chloride on monobrombenzene (abst.), - - - - - 4, 174

DUNHAM, E. K. Value of a bacteriological examination of water, 19, 591

DUNNINGTON, F. P. Determination of sulphur in coal, P. 1, 97 : Analysis of aragonite containing lead, P. 2, 14 : Determination of copper, P. 2, 140 : Manganese in the ash of wheat, P. 2, 141 : Analyses of ashes of certain weeds, 2, 24 : Metatitanic acid and the estimation of titanium by hydrogen dioxide, 13, 210 : Improved gas regulator, 17, 781 : Collector for distillation of ammonia from water, - - - - - 20, 286

DUPETIT, G. See Gayon, U.

DUPRÉ, A. Relations between amounts of silica and alumina in pure wheat (abst.), 1, 110 : Detection of foreign coloring-matters in wine (abst.), 1, 577 : Examination of potable waters (abst.), - - - - - 4, 162

DUPRÉ, A., and H. W. Hake. Gravimetric determination of minute quantities of carbon (abst.), - - - - - 1, 108

DUVILLIER, E. Recovery of platinum from residues (abst.), 1, 587 : Compounds of the creatinine group (abst.), - - - - - 4, 273

DUVILLIER, E., and A. Buisine. Commercial trimethylamine (abst.), 1, 398

DYSON, S. Brominated carbon compounds obtained in the manufacture of bromine (abst.), 5, 93 : See also Thorpe, T. E.

EAVENSON, A. See Doolittle, O. S.

EDDY, H. P. Sewage disposal at Worcester, Mass., - - - - - 16, 682

EDER, J. M. Characteristic of Chinese tea, and detection of adulterations (abst.), 1, 362 : Behavior of glue and carbohydrates with chromates (abst.), 1, 493 : Chemical composition of pyroxylon and the formula of cellulose (abst.), 2, 173 : New chemical photometer (abst.), - - - - - 2, 173

EDGAR, C. G. See Dennis, L. M.

EDLER, E. Nitropseudocumene, pseudocumidine, and pseudocumenol, holding the position 1 : 3 : 4 : 5 (abst.), - - - - - 7, 249

EFFRONT, J. Isomeric isobutyl-*o*-amidotoluenes (abst.), 7, 88 : Method for the determination of starch and different kinds of sugars (abst.), - - - - - 9, 36

EGLI, K. Products of the dry distillation of ammonium benzene-sulphonate (abst.), - - - - - 7, 231

EHRENBURG, A. On mercury fulminate (abst.), 7, 122 : Sodium fulminate (abst.), 7, 201 : Fulminuric acid (abst.), 7, 248 : Chlor- and brom-fulminuric acid (abst.), - - - - - 7, 248

EHRENFELD, C. H. Mineral group from York, Pa., 15, 543 : Chemical behavior of tungsten and molybdenum, and their trioxides, 17, 381

EHRHARDT, R. See Gattermann, L.

EHRLICH, L. On gallium (abst.), - - - - - 7, 77

EICHBAUM, F. Preparation of soap (abst.), - - - - - 8, 206

EILART, A. Some reactions of carbon dioxide, carbon disulphide, and sulphur dioxide (abst.), 7, 286 : Absorbents for carbon disulphide vapor (abst.), 7, 286 : The calorimetric bomb as a combustion furnace for ultimate analysis (abst.), 10, 172 : Index to literature of stereochemistry, 14, 241 : Note on the stereochemistry of creatinines, - - - - - 14, 284

EINHORN, A. Preparation of *o*-nitrobenzaldehyde (abst.), 6, 87 : The force function in crystals (abst.), 7, 199 : Synthesis of alcohol-acids of the pyridine series (abst.), - - - - - 12, 160

EINHORN, A., and A. Marquardt. Dextro-cocaine (abst.), - - - - - 12, 164

EKSTRAND, A. E. Mononitro-*a*-naphthoic acid (abst.), - - - - - 7, 147

ELIASBERG, S. Separation of zinc and cadmium by electrolysis (abst.), - - - - - 7, 296

ELLIOTT, A. H. Table of values of sulphuric acid, P. 2, 26 : Apparatus for rapid analysis of mixture of gases, 3, 91 : Nitro-saccharose, 4, 147 : Nitrosaccharose : a correction, - - - - - 4, 186

ELLIOTT, A. H., and F. Sands. Notes on bone oil, - - - - - 4, 153

ELLMS, J. W. See Richards, Ellen H.

ELSBACH, L. Compounds of naphthoquinone with toluidine and ethylaniline (abst.), - - - - - 5, 19

ELTZBACHER, F. See Anschütz, R.

EMERY, J. A. See De Schweinitz, E. A.

EMMENS, S. H. Some new nickel minerals, 14, 205 : Constitution of nickeliferous pyrrhotite, - - - - - 14, 369

ELLIS, J. On Maumené's test for oils (abst.), - - - - - 8, 108

ELLIS, W. H. Official milk analysis in Canada, - - - - - 14, 363

EMMERLING, O. Metallic phosphides (abst.) - - - - 1, 168

ENDEMANN, H. Determination of the relative effectiveness of disinfectants, P. 1, 24 : Bismuth in lead in the manufacture of white lead, P. 1, 70 : Alcohol *in statu nascendi*, P. 1, 173 : Note on density of chlorine at high temperatures, 1, 310 : Review of latest investigations on dissociation of elements, 1, 313 : Boracic acid as a preservative, 1, 477 : On the constitution of ultramarine, 2, 387 : On some quinoline substitution products, 7, 222 : Formation of ammonium thiosulphate in gas generators, 8, 47 : Photographic process by means of aniline black, 8, 189 : Paul Casamajor (obituary), 9, 206 : Dr. Meinhard Alberg (obituary), - - - - 19, 954

ENDEMANN, H., and G. A. Prochazka. Laboratory notes, 1, 525 : Preparation of standard soda solution, 1, 525 : Hydrobromic acid as a very delicate test for copper, 1, 525 : Examination of sweet potatoes, - - - - 1, 526

ENDEMANN, H. See also Prochazka, G. A.

ENGEL, R. Solution of magnesium carbonate in carbonic acid water (abst.), 7, 114 : Solubility of copper sulphate in presence of ammonium sulphate (abst.), 8, 34 : Influence of acid ammonium oxalate on the solubility of neutral oxalate (abst.), 8, 71 : Reagent to detect the acid nature of weak acids, etc. (abst.), 8, 79 : Hydrates of zinc chloride (abst.), 8, 162 : Variations of solubility of some chlorides in presence of hydrochloric acid (abst.), 8, 163 : Combinations of zinc chloride with hydrochloric acid (abst.), 8, 163 : Alcoholate of potassium hydroxide (abst.), 8, 273 : An organic acid obtained by the action of alcoholic potassium hydroxide on a mixture of chloroform and acetone (abst.), - - - - 9, 102

ENGEL, R., and A. de Girard. New method of making acetal (abst.), 2, 432

ENGEL, R., and A. Moitessier. Dissociation of ammonium sulphide (abst.), - - - - 1, 402

ENGELHARDT, H. See Dohme, A. R. L.

ENGLE, W. D. Action of metallic thiocyanates upon chlorhydrins, 20, 668

ENGLER, C. Viscosity of lubricating oils (abst.), 7, 93 : Artificial production of petroleum, - - - - 15, 379

ENOCH, C. See Tafel, J.

ERDMANN, H. Phenylisocrotonic acid and nitric acid. Phenyl-nitroethylene (abst.), 7, 87 : Conversion of naphthylaminesulphonic acids into dichloronaphthalene (abst.), 10, 42 : See also Volhard, J.

ERLENMEYER, E. The two isomeric dibromopropanes (abst.), 2, 181 : Phenyllactic acids (abst.), 2, 366 : Phenylbromlactic acid (abst.), 2, 366 : Synthesis of cinnamic acid (abst.), - - - - 5, 65

ERLENMEYER, E., and C. L. Müller. Halogenized and hydroxylized organic acids (abst.), - - - - 4, 175

ESCHELLMANN, G. The loss of niter in the manufacture of sulphuric acid (abst.), - - - - 6, 141

ESSNER, J. C. See Oechsner de Coninck, W.

ÉTARD, A. Researches upon sulphates (abst.), 1, 278: Isomery of cuprous sulphites (abst.), 4, 241: Preparation of hydriodic acid (abst.), 10, 77: See also Gal, H.

EVANS, F. P., and W. Ramsay. Halogen compounds of selenium (abst.), - - - - - 6, 79

EVERHARDT, E. See Leeds, A. R.

EWELL, E. E. Chemistry of the *Cactaceae*, 18, 624, (83): Condenser for distillation of liquids having low boiling-points, - - - - - 19, 398

EWELL, E. E., and H. W. Wiley. Some products of cassava, 15, 78: Effects of acidity on the development of nitrifying organisms, - - - - - 18, 475, (82)

EWELL, E. E. See also Wiley, H. W.

EVYONNET, L. See Lepine, R.

EYSTER, G. S. Determination of the rotation of left-handed solutions, 5, 104: New overflow pipette, - - - - - 5, 218

FABRE, C. See Berthelot, M.

FAHLBAUM. Purification of mineral oil with sulphurous acid (abst.), 8, 206

FAHLBERG, C. On the liquid toluenesulphonchloride (abst.), 1, 287: See also Remsen, I.

FARRINGTON, E. H. Acidity of milk increased by boracic acid, - - - - - 18, 847

FAUCONNIER, A. Determination of urea by the alkaline hypochlorites and hypobromites (abst.), 2, 132: Mannide (abst.), 5, 120: On the second anhydride of mannitol (abst.), - - - - - 6, 38

FAWSITT, C. A. Action of sulphur chloride on oils (abst.), - - - - - 10, 116

FAXON, W. A. See Rolfe, G. W.

FAV, H., and H. P. Talbot. Segregation of carbon in a piece of boiler plate, - - - - - 20, 614

FEHRMANN, A. Preparation of lead dioxide (abst.), - - - - - 5, 51

FEHRMANN, W. Auramines (abst.), - - - - - 9, 212

FELS, J. Disintegration and solution of chrome iron stone (abst.), 1, 558

FEIT, W. Determination of mercury (abst.), 12, 17: Determination of thallium (abst.), - - - - - 12, 17

FENTON, H. J. H. Action of hypochlorites on urea (abst.), 1, 101: Transformation of urea into cyanamide (abst.), - - - - - 4, 221

FERGUSON, W. C. Compressed air wash-bottle, 16, 148: Arrangement for conducting a number of laboratory distillations with steam, simultaneously, 16, 150: Remarks about basic sulphate of alumina, 16, 153

FESER. Optical estimation of fat in milk (abst.), - - - - - 1, 570

FIELD, C., and E. F. Smith. Separation of vanadium from arsenic, 18, 1051

FIELD, W. D. Pyroxylin, its manufacture and applications, 15, 140; 16, 487, 543: Note on the manufacture of the prussiates, - - - - - 15, 569

FIELDS, J. Modification of the Gunning method for nitrates, - - - - - 18, 1102

FILHOL, E., and Senderens. Arsenates neutral to litmus (abst.), - - - - - 4, 272

FINKENER, R. Detection of mineral oil in resin oil (abst.), 8, 65: Elaidin reaction (abst.), 8, 232: Examination of soap powders (abst.), - - - - - 8, 233

FINKLER, D. See Pflüger, E.

FIREMAN, P. New mode of formation of tertiary and quaternary phosphines, 18, (89): Observations on the centric benzene formula and the aromatic character, - - - - - 20, (66)

FISCHER, B., and O. Philipp. Dimethylazobenzene as an indicator in alkalimetry (abst.), - - - - - 7, 204

FISCHER, EMIL. On caffeine (abst.), 4, 174: Transformation of xanthine into theobromine and caffeine (abst.), 4, 264: Note on triacetonealkamine (abst.), 5, 134: On uric acid (abst.), 7, 29: Synthesis of glucose (abst.), 12, 157: Synthesis of mannose and levulose (abst.), 12, 165: Synthesis in the sugar group, - - 12, 340, 400, 461

FISCHER, E., and H. Koch. Ethylphthalylacetooacetate (abst.), - - - - - 5, 238

FISCHER, E., and H. Kuzel. Quinazole compounds (abst.), - - - - - 5, 238

FISCHER, E., and J. Tafel. Synthetical experiments in the sugar group (abst.), - - - - - 9, 191

FISCHER, EMIL. See also Penzoldt, F.

FISCHER, EUGEN. New series of dye-stuffs (abst.), 2, 367: Phenanthrenedisulphonic acid and some of its derivatives (abst.), - - - - - 2, 367

FISCHER, F. Examination of butter by polarized light (abst.), 1, 358: Apparatus for determination of oxygen in the air (abst.), 1, 585: New form of calorimeter (abst.), - - - - - 1, 586

FISCHER, G. New dye-stuff from *o*-amidophenol (abst.) - - - - - 1, 493

FISCHER, L. A. Facilities for standardizing chemical apparatus afforded by foreign governments and our own, - - - - - 20, 912

FISCHER, O. Nicotinic acid from pyridine (abst.), 4, 176: Condensation products of aromatic bases (abst.), - - - - - 5, 19

FISCHER, O., and L. German. On the violet derivatives of triphenylmethane (abst.), - - - - - 5, 241

FISCHER, O., and G. Körner. On the violet derivatives of triphenylmethane (abst.), 6, 85: New method of producing acridine (abst.), 6, 86: Chrysanthine and some of its derivatives (abst.), - - - - - 6, 237

FISCHER, O., and C. Rudolph. New class of dye-stuffs (abst.), 5, 28

FISCHER, O. See also Bedall, K.

FISCHER, R. Alkaloids of *Sabadilla*, - - - - - 14, 226

FITTICA, F. A second monobrombenzene (abst.), - - - - - 12, 352

FITTIG, R. Researches upon the unsaturated acids (abst.), 1, 236: Constitution of tiglic acid and angelic acid (abst.), 1, 241: Formation of unsaturated hydrocarbons from unsaturated acids (abst.), 1, 246: Constitution of vinaconic acid (abst.), - - - - - 7, 82

FITTIG, R., and F. Binder. Addition products of cinnamic acid (abst.), - - - - - 1, 242

FITTIG, R., and H. Liepmann. Constitution of isodiphenic acid and fluoranthrene (abst.), - - - - - 1, 169

FITTIG, R., and F. Röder. An acid isomeric with itaconic acid (abst.), - - - - - 5, 124

FITTIG, R., and C. Wurster. Atropic and isatropic acids (abst.), 1, 243

FITZ, A. Normal propyl alcohol from glycerol (abst.), - - - - - 2, 94

FLAVITZKY, F. Relations between amounts of rotation of plane of

polarization (abst.), 4, 173 : Molecular refraction of the terpenes (abst.), - - - - - 4, 173

FLECHSIG, E. See Weiske, H.

FLECK, H. Separation of trimethylamine from ammonia, - - - - - 18, 670

FLECK, H., and L. L. Bassett. Reduction with magnesium amalgam, - - - - - 17, 789

FLEISCHER, E. The hygrometer in the desiccator (abst.), - - - - - 6, 98

FLEISCHMAN, L. Detection of alcohol in essential oils and chloroform (abst.), - - - - - 1, 582

FLEISSNER, F. See Lippmann, E.

FLETCHER, J. New method of preparing hydrogen sulphide (abst.), 1, 586

FLETCHER, T. Coal gas as a labor-saving agent in trade (abst.), - - - - - 6, 106

FLEURY, G. Estimation of alcohol in wine (abst.), - - - - - 1, 573

FLIGHT, W. Composition of ancient alloys and metal work (abst.), 4, 171 : Action of sodium hydroxide and carbonate on felspars and wollastonite (abst.), 4, 199 : Two new aluminous species, evigtokite and liskeardite (abst.), - - - - - 5, 97

FLIMM, W. Synthesis of indigo from monobromacetanilide (abst.), 12, 163

FLINTERMANN, R. F., and A. B. Prescott. Dipyridinetrimethylene-dibromide, etc., - - - - - 18, 28

FLÜCKIGER, F. A. Determination of alkaloids in cinchona bark (abst.), 4, 193 : Determination of ash (abst.), - - - - - 10, 194

FOCKE, W. O. Detection of mineral oil in fatty oils and fuller's grease (abst.), - - - - - 8, 38

FOCKE, [M.] Separation of strychnine and morphine from fatty matters (abst.), - - - - - 9, 15

FOERSTER, F. Quantitative determination of camphor (abst.), - - - - - 12, 477

FÖRSTER, K. Cause of Jorissen's reaction for amyl alcohol (abst.), 4, 196, 207 : Quantity of furfural contained in fermented liquors (abst.), - - - - - 4, 229

FOERSTER, O. Apparatus for fat extraction (abst.), - - - - - 10, 69

FORSTER, P. Coloring-matters from *Sophora japonica*, *Capparis spinosa*, and *Ruta graveolens* (abst.), - - - - - 4, 206

FORBES, R. H. Apparatus for the estimation of carbonic acid - - - - - 16, 204

FORCRAND, D. DE. Formation of organic ultramarines (abst.), 1, 171, 277: Preparation of glycolol by means of ethyl nitracetate (abst.), 1, 390: Hydrate of hydrogen sulphide (abst.), 4, 242: Preparation of glyoxal (abst.), 6, 89 : Transformation of glyoxal into glycolic acid (abst.), 6, 90 : On the sulphites and bisulphites of sodium (abst.), 6, 189 : On glyoxal bisulphite of sodium (abst.), 6, 189 : Sodium glycerolate (abst.), - - - - - 8, 184

FORD, A. P., and I. M. Bregowsky. Use of hydrofluoric acid in the determination of manganese, etc., - - - - - 20, 504

FORDOS, M. J. Detection of fuchsine in wine (abst.), - - - - - 1, 574

FORST, C., and C. Böhringer. Behavior and occurrence of cinchonine, hydrocinchonidine and hydroquinidine (abst.), - - - - - 4, 267

FORSTER, J. The physiological effect of boric acid (abst.), - - - - - 6, 158

FÖSTER, C. LE N. Traveling blowpipe lamp, 1, 91: detection of boric acid, - - - - - 1, 528

FÖSTER, W. Nitrogen of coal during destructive distillation, also estimation of nitrogen in coal and coke (abst.), - - - - - 5, 95

FOULK, C. W. Effect of an excess of reagent in the precipitation of barium sulphate, 18, 793 : Effect of excess of reagent in precipitation of magnesium ammonium phosphate, - - - - - 20, (47)

FOX, W. Action of petroleum on lead (abst.), - - - - - 10, 92

FOX, W., and J. A. Wanklyn. Determination of glycerol (abst.), - - - - - 8, 27

FRANCHIMONT, N. On betulin (abst.), 1, 157 : Coloring-matter of sandal-wood (abst.), 1, 158 : On lactucone (abst.), 1, 158 : On zinc acetate (abst.), - - - - - 1, 158

FRANCIS, E. H. Toughened filter-paper (abst.), - - - - - 7, 211

FRANKFORTER, G. B. The iodides of narceine, - - - - - 16, 361

FRANKLAND, P. F. Illuminating power of ethylene when burnt with non-luminous combustible gases (abst.), 6, 46 : Illuminating power of hydrocarbons (abst.), 7, 213 : Gasometric method of determining nitrous acid (abst.), - - - - - 10, 67

FRANKLAND, P. F., and F. Jordan. Gases evolved during the conversion of grass into hay (abst.), - - - - - 5, 114

FRANKLAND, P. F., and F. Turner. Action of allyl iodide upon phenol in presence of lime or aluminum foil (abst.), - - - - - 5, 234

FRAUDE, G. Phthalein of *o*-cresol (abst.), 1, 395 : Perchloric acid as a reagent for alkaloids (abst.), - - - - - 1, 545

FREHSE, M. Detection and colorimetric estimation of salicylic acid (abst.), - - - - - 9, 15

FREMY, M. Arsenotungstic acid (abst.), - - - - - 6, 306

FREMY, E. Method for analysis of vegetable tissues (abst.), - - - - - 1, 345

FRENCH, A. Process for obtaining ammonium chloride from the nitrogen of coal, etc. (abst.), - - - - - 10, 184

FRENZEL, J., and T. Weyl. Determination of casein by precipitation with sulphuric acid (abst.), - - - - - 8, 61

FRESENIUS, H. Determination of arsenic in pyrites (abst.), 10, 66 : Arsenic in bone phosphate fodder (abst.), - - - - - 11, 54

FRESENIUS, R. Examination of commercial copper (abst.), 4, 167 : Test for titanic acid (abst.), 7, 210 : Separation of barium from strontium (abst.), - - - - - 12, 118, 410

FRESENIUS, R., and E. Borgmann. Analysis of pure wines (abst.), 6, 97

FRESENIUS, R., and E. Hintz. Determination of tin in tin slags (abst.), 7, 210 : Analysis of chrome iron (abst.), - - - - - 12, 117

FRESENIUS, R., and W. F. Fresenius. Detection of adulterations in Portland cement (abst.), - - - - - 6, 290

FRESENIUS, W. Variations in quality of Swedish filter-paper (abst.), 1, 376 : Use of asbestos in filtration (abst.), 10, 69 : Determination of phosphoric acid in sweet wines (abst.), 11, 53 : Examination of alcoholic liquors (abst.), - - - - - 12, 503

FRESENIUS, W. F. See Fresenius, R.

FREUND, M., and P. Herrmann. A new hexylamine and a new hexyl alcohol (abst.), - - - - - 12, 155

FREW, W. See Carnelley, T.

FREYTAG, B. Derivatives of propionic acid (abst.), - - - - - 2, 135

FRIEDBURG, L. H. On bisulphide of carbon, 4, 252: Manufacture of tartaric acid, 4, 292: Active principle of rennet, so-called chymosin, 10, 98: On Graftian's new fat extractor, 10, 162: On Curtius' hydrazine, 10, 164: On the formation of anthraquinone under peculiar conditions, 12, 26: On the preparation of thiophen, 12, 83: Notes on quantitative analysis, 12, 131: Studies on resins, 12, 285, 392: On the relative intensity of chemical force, 12, 292: Action of nitrous anhydride upon organic compounds. New quinone oxime, 13, 111: Notes on acid calcium tartrate, and on alkyl iodides, - - - - - 13, 144

FRIEDBURG, L. H., and J. A. Mandel. On the action of nitrogen trioxide upon different organic compounds, - - - - - 12, 7, 54

FRIEDEL, C. Experiments on the combustion of the diamond (abst.), 6, 36

FRIEDEL, C., and M. Balsohn. Transformation of styrene bromide into methyl benzoate (abst.), 2, 92: Oxidation of ethylbenzene (abst.), 2, 92: Action of bromine upon diphenylmethane (abst.), 2, 366: Action of monobromodiphenylmethane on ammonia (abst.), 2, 436: Synthesis of diphenylacetic acid (abst.), - - - - - 2, 436

FRIEDEL, C., and J. M. Crafts. Direct combination of various metal groups with benzene and toluene (abst.), 1, 397: Decompositions produced by action of aluminum chloride (abst.), 4, 170: Action of methylene chloride on toluene and benzene (abst.), 6, 163: Decomposing action of aluminum chloride on certain hydrocarbons (abst.), - - - - - 7, 142

FRIEDHEIM, C. Separation of vanadic from tungstic acid (abst.), 12, 175

FRIEDLÄNDER, P., and H. Ostermaier. Carbostyryl (abst.) - - - - - 4, 230

FRIEDLANDER, T., and J. Mähly. Dinitrocinamic acid (abst.), 5, 242

FRIEDRICH, R. Decomposition of mono-halogen substituted crotonic acids by alkalies (abst.), - - - - - 4, 206

FRIESE, G. See Bernthsen, A.

FRITZSCHE, P. Oxyphenylacetic acid (abst.), 1, 294: Oxyphenylacetic acid and its derivatives, - - - - - 2, 292

FROHMAN, E. D. See Noyes, W. A.

FROMMEL, J. See Clermont, P. de.

FRÜHLING, R., and J. Schulz. Analyses of milk (abst.), - - - - - 9, 122

FRUTIGER, G. New ureometer (abst.), - - - - - 8, 96

FÜRBRINGER, P. Precipitation of albumin in acid urine (abst.), 1, 348

FULTON, C. H. Assay of telluride ores, - - - - - 20, 586

GABBA, L., and O. Textor. Influence of composition of water in production of raw silk (abst.), - - - - - 1, 159

GABRIEL, S. Benzylideneephthalide and *iso*-benzalphthalide (abst.), 9, 210

GABRIEL, S., and A. Deutsch. Diphenyl derivatives containing stibphur (abst.), - - - - - 2, 370

GABRIEL, S., and H. Hendess. Benzyl derivatives (abst.) - 9, 211

GABRIEL, S., and P. Heymann. Anhydro-bases from amidomercap-
tans of the fatty series (abst.) - - - - 12, 158

GABRIEL, S., and W. E. Lauer. On propylamine (abst.) - - - - 12, 158

GAL, H., and A. Étard. Researches upon strychnine (abst.) - - - 1, 273

GALBRAITH, W. Claim of priority (abst.) - - - - 1, 325

GALEWSKY, P. Action of ammonia on di- and tri- halogen substitu-
tion products of hydrocarbons (abst.) - - - - 12, 228

GANTTER, F. Determination of solids and fat in milk and butter
(abst.) - - - - 10, 27

GANTTER, F., and C. Hell. Bromo-substitution products of suberic
acid (abst.), 4, 204 : Pimelic acid, an oxidation product of castor
oil (abst.) - - - - 8, 110

GAROLA, C. V. Contributions to study of oil cakes used in feeding - 15, 656

GARRIGUES, W. E. The Gunning method for total nitrogen in ferti-
lizers, 16, 795: Determination of melting-points and composition of
some candle material, 16, 825: Determination of potash in
manures, 17, 47: Analysis of bearing-metal alloys, with a new
volumetric method for determining copper, 19, 934: Determina-
tion of lead in alloys, - - - - 20, 508

CARTENMEISTER, R. Boiling-points and specific volumes of ethereal
salts of fatty acids (abst.) - - - - 8, 228

GARZAROLLI-THURNLACKE, K., and G. Schacherl. Chlorine mon-
oxide (abst.) - - - - 7, 244

GASIOROWSKI, K., and V. Merz. Nitriles from formanilide (abst.) - 8, 74

GASIOROWSKI, K., and A. F. Wayss. On the diazo-compounds
(abst.) - - - - 7, 228

GASKELL, H., and F. Hurter. Preparation of sodium bicarbonate
(abst.) - - - - 6, 173

GASPARIN, P. DE. Dissemination, accumulation, and determination
of phosphoric acid in soils (abst.) - - - - 6, 137

GATTERMANN, L. Modification of Schiff's apparatus for the volu-
metric determination of nitrogen (abst.) - 7, 92: Researches on
diazo-compounds (abst.) - - - - 12, 232

GATTERMANN, L., R. Ehrhardt, and H. Maisch. Friedel-Crafts' syn-
thesis of ketones from phenolethers (abst.) - - - - 12, 227

GATTERMANN, L., and W. Hausknecht. Spontaneously inflammable
hydrogen phosphide (abst.) - - - - 12, 224

GATTERMANN, L., and A. Rossolimo. Modification of the urea chlo-
ride synthesis (abst.) - - - - 12, 229

GAUTIER, A. Chlorophyll (abst.), 2, 90: Observations on Vincent and
Delachanal's paper on methyl cyanide (abst.), 2, 433: Isomers of
phloroglucin (abst.), 2, 436: Insoluble modification of pepsin
(abst.), 4, 237: On bacterian and physiological alkaloids, ptom-
aines, and leucomaines (abst.) - - - - 9, 114

GAUTIER, H. Direct chlorination of methylbenzoyl (abst.) - 8, 167 :
Action of chlorine on anhydrous chloral (abst.) - 8, 36 : See also
Colson, A.

GAWALOVSKI, A. Scheibler's calcimeter as an azotometer (abst.), 1, 375 : Comparative value of different filter-papers (abst.), 1, 376 : An indicator of neutrality in acidimetry and alkalinometry (abst.), 5, 245 : Reagent bottles (abst.), 7, 173 : Soap analysis (abst.), 7, 179 : Bottles for reagents sensitive to light (abst.), - - - 7, 209

GAYON, U. Inactive glucose, or neutral sugar (abst.), - - - 2, 364

GAYON, U., and G. Dupetit. Fermentation of nitrates (abst.), - - - 5, 117

GEHRING, G. Butyl mono- and di-chloracetates (abst.), - - - 8, 180

GRISLER, H. Determination of water in milk (abst.), - - - 1, 358

GEISLER, J. F. New condenser attachment, 10, 63 : Notes on the morphiometric assay of opium, 10, 143 : The relative merits of the Wanklyn and the Adams methods for determination of fat in milk analysis, 12, 488 : Signification of lactometer tests, 13, 93 : Milk analyses, 13, 120 : Analysis of a Pekoe Ceylon tea, 13, 237 : Detection of a yellow azo dye used for the artificial coloring of fats, 20, 110

GELZER, C. Derivatives of *p*-amido-*iso*-butyl benzene (abst.), - - - 10, 19

GENTH, F. A. Examination of North Carolina uranium minerals (abst.), - - - - - 1, 281

GENTH, F. A., JR. On several Spanish minerals (abst.), - - - 2, 43

GEORGES, [M]. Detection of peptones in blood and urine (abst.), - - - 8, 231

GERBER, M. See Rosenstiehl, A.

GERBER, N. Addition of goat's milk to cow's milk (abst.), - - - 8, 233

GERLACH, G. T. Boiling-points of solutions of salts, etc. (abst.), 9, 109 : Specific gravity tables (abst.), - - - - - 10, 159

GERICHTEN, E. VON. Constitution of phthalylchloride (abst.), - - - 2, 371

GERMAN, L. See Fischer, O.

GERRESHEIM, H. Contributions to knowledge of ammoniacal mercury compounds (abst.), - - - - - 1, 259

GEYER, W. E. See Morton, H.

GIACOSA, P. Preparation of phenolglycollic acid etc. (abst.), - - - 4, 496

GIACOSA, P. Determination of phenol (abst.), 4, 196 : See also Nencki, M.

GIBBS, W. Complex inorganic acids (abst.), 1, 111 : Researches on the complex inorganic acids (abst.), - - - - - 1, 482

GIEBERMANN, R. See Riggs, W.

GILBERT, J. H. See Lawes, Sir J. B.

GILCHRIST, P. S. Improvements in manufacture of sulphuric acid, - - - - - 15, 624 ; 16, 498

GILES, W. W., and A. Shearer. Estimation of sulphurous acid (abst.), 6, 194

GILL, A. C. See Dennis, L. M.

GILL, A. H. Determination of nitrates in potable water, 16, 122, 193 : Modification of Hinman's explosion pipette, 17, 771 : Improved gas pipette for the absorption of illuminants, - - - - - 18, 67

GILL, A. H., and S. P. Hunt. Determination of methane and hydrogen by explosion, - - - - - 17, 986

GILL, A. H., and H. A. Richardson. Determination of nitrites in potable water, - - - - - 18, 21

GIMINGHAM, C. H. Contributions to the development of the Sprengel air-pump (abst.), - - - - - 6, 97

GINTL, W. F. Analysis of water of spring at Marienbad, Bohemia (abst.), - - - - - 2, 135

GIRARD, A. Transformation of hydrocellulose into friable pyroxylin (abst.), 1, 400 : Determination of astringent substances in wine (abst.), 4, 242 : Determination of starch in the potato (abst.), 10, 87

GIRARD, A. DE. See Engel, R.

GIRARD, C. Action of barium hydroxide on some aniline compounds (abst.), 1, 397 : Detection of aniline colors in wine (abst.), 1, 576 : Preparation of pure levulose (abst.), - - - - - 2, 133

GIRARD, C., and L. L'Hote. Aniline dichromate (abst.), - - - - - 9, 173.

GIRARD, C. See also Caventou, E.

GIRARD, J. DE. Combinations of hydrogen phosphide with chloral hydrate (abst.), - - - - - 8, 199.

GIRAUD, H. Volumetric separation of tin and antimony (abst.), 8, 200 : A physical property of α -triphenylguanidine (abst.), 8, 203

GIRD, W. K. A gravimeter for sugar analysis, - - - - - 16, 677

GLADDING, T. S. Determination of reverted phosphates, 4, 113 : Estimation of phosphoric acid as magnesic pyrophosphate, 4, 135 : Modification of apparatus for determination of nitrogen (abst.), 4, 160 : Determination of rosin in fats (abst.), 4, 192 : On the reversion of phosphoric acid (abst.), 6, 168 : Estimation of potash, 8, 12 : Estimation of sulphur in pyrites, 16, 398 : Determination of sulphur in pyrites ; a reply, 17, 397 : Gravimetric method of estimating phosphoric acid as ammonium phosphomolybdate, 18, 23 : Microscopic detection of beef fat in lard, 18, 189 : Estimation of sulphur in pyrites, 18, 446 : Determination of iron oxide and alumina in phosphoric rock, etc., 18, 717 : New method for the estimation of iron oxide and alumina in phosphate rock, 18, 721 : Boric acid determination, 20, 288 : See also Stillwell, C. M.

GLADSTONE, J. H., and A. Tribe. Aluminum alcohols, products of their decomposition by heat (abst.), 4, 142 : Action of light and heat on cane and invert sugars (abst.), 5, 232 : Hydroxyamine (abst.), 5, 232 : Recovery of iodine from organic iodide residues (abst.), 5, 232 : On tests for alcohol (abst.), 5, 233 : Residual phenomenon of the electrolysis of sulphuric acid (abst.), 5, 232 : Reaction of the copper zinc couple on nitric oxide (abst.), 5, 233 : Reducing action of spongy lead (abst.), - - - - - 5, 233

GLASER, C. Determination of phosphoric acid (abst.), 7, 178 : Determination of reverted phosphoric acid, etc. (abst.), 7, 179 : Remarks on Mohr's article on the determination of reverted phosphoric acid (abst.), 7, 179 : Estimation of thoria. Analysis of monazite sand, 18, 782 : Sodium peroxide in quantitative analysis, - - - - - 20, 130

GLATZEL, E. Synthesis of iron pyrites (abst.), - - - - - 12, 155

GLRICHMANN, L. Reaction of dimethylphenylphosphine on ethylene bromide (abst.), 4, 206 : See also Michaelis, A.

GODEFFROY, R. Atomic weight of caesium (abst.) - - - - 1, 106

GOES, B. Diphenyldiamidonaphthol (abst.) - - - - 2, 170

GOESSMANN, C. A. Contributions from the agricultural laboratory, P. 1, 2, 60 : Contributions to the chemistry of the American grape vine, P. 2, 35 : Recent experiments with sugar-cane in Louisiana, P. 2, 52 : Experiments with sugar-beet roots, P. 2, 56 : Examination of Minnesota early amber cane, 1, 44: Experiments with fertilizers upon sugar-cane, 1, 416 : Sugar in corn-stalks and melons, 1, 420 : Contributions to the chemistry of fruit culture, 1, 423 : Analyses of intestinal concretions of horses, 1, 430 : Examination of Eastern, Western, and Southern corn, - - - - - 2, 7

GÖTSCHMANN, T. Methyl and dimethylidiacetonamine (abst.) - - - - - 2, 175

GÖTTIG, C. Compound of calcium chloride and normal propyl alcohol which moves on water (abst.) - - - - - 12, 156

GOTTSCH, H. See Dürkopf, E.

GOLDBERG, A. Parahydroxysalicylic acid (abst.), 1, 495 : See also Schmitt, R.

GOLDSCHMIDT, H. Phosphorus pentasulphide (abst.), 4, 227 : On nitrosophenols (abst.) - - - - - 6, 287

GOLDSCHMIDT, H., and A. Meissler. Constitution of tautomeric compounds (abst.) - - - - - 12, 167

GOLDSCHMIDT, H., and V. Meyer. Determination of density of gases (abst.) - - - - - 4, 176

GOLDSCHMIDT, H., and H. Schmid. On nitrosophenols (abst.) - - - 7, 230

GOLDSMITH, L. See Mabery, C. F.

GOLL, O. See Nietzki, R.

GOMBERG, M. Action of Wagner's reagent upon caffeine and a new method for the estimation of caffeine, 18, 331 : Perhalides of caffeine, 18, 347 : New form of potash bulb, 18, 941 : Tetraphenylmethane, 20, 773 : Periodide of triphenylbrommethane, - - - - - 20, 790

GOMBERG, M., and A. Campbell. Hydrazo- and azo-derivatives of triphenylmethane, - - - - - 20, 780

GOOCH, F. A. Determination of phosphoric acid as magnesium pyrophosphate (abst.), 1, 537 : Method for separation and ignition of precipitates (abst.), 1, 582: New method for separation and treatment of precipitates (abst.), 2, 43 : Method for estimation of phosphoric acid as magnesium pyrophosphate (abst.) - - - - - 2, 220

GOOCH, F. A., and J. E. Whittfield. Analysis of waters of the Yellowstone National Park (abst.) - - - - - 10, 188

GORDIN, H. M., and A. B. Prescott. Atropine periodides and iodo-mercurates, - - - - - 20, 329

GORDIN, H. M. See also Prescott, A. B.

GORE, G. Chemical action with carbon and its compounds (abst.) - - - - - 6, 286

GORGU, A. Basic salts of manganese (abst.), 4, 242 : Silicated chloride of manganese (abst.), 6, 76 : Zinc ferrite. Artificial production of franklinite (abst.) - - - - - 9, 100

GOSSIN, E. Action of isobutyl chloride on benzene in the presence of aluminum chloride (abst.) - - - - - 6, 192

GOTTSCHALK, M. Action of nitric acid on pentamethylbenzene (abst.) - - - - - 10, 37

GOUSIOROWSKI, K. See also Gasiorowski, K.

GOUSIOROWSKI, K., and V. Merz. Nitriles and carboxylic acids from aromatic amines (abst.) - - - - - 6, 85

GRABOWSKY, J. Galician ozokerite and ceresine, - - - - - P, 1, 121

GRAEBE, C. Synthesis of anthraquinoline (abst.) - - - - - 6, 167, 234

GRAEBE, C., and H. Caro. Acridine (abst.) - - - - - 2, 98

GRAEBE, C. See also Brunck, H.

GRANDEAU, H. Decomposition of aluminum phosphate at a high temperature (abst.) - - - - - 5, 119

GRANDVAL, A., and H. Lajoux. Rapid determination of nitric acid (abst.) - - - - - 7, 293

GRAVES, E. E. See Plimpton, R. T.

GREEN, A. G., and S. Rideal. A volumetric method for the estimation of nitrous acid (abst.) - - - - - 6, 170

GREEN, A. G., C. F. Cross, and E. J. Bevan. New photographic process (abst.) - - - - - 12, 476

GREEN, A. G. See also Morley, H. F.

GREEN, F. T. Device for the adjustment of a balance, - - - - - 16, 699

GREEN, J. R. Composition of edible swallow's nest (abst.) - - - - - 7, 289

GREENE, W. H. Preparation of methylene chloride, etc., 1, 522 : Acetobenzoic anhydride (abst.), 2, 431 : Remarks on Dr. Doremus' apparatus for estimation of urea, - - - - - 7, 166

GREGG, W. H. New specific gravity bottle, - - - - - 3, 26

GREIFF, P. Production of anthranilic acid from orthonitrotoluene (abst.) - - - - - 2, 227

GREINER, E. New automatic pipette, - - - - - 16, 643

GRESLY, J., and F. Meyer. Mesitylenephthaloylic acid (abst.) - - - - - 5, 18

GRETE, E. A. Behavior of nitric acid when heated with soda-lime (abst.), 1, 100 : Determination of nitrogen in horn, etc. (abst.), 1, 542

GREUEL, G. Solubility of iodine in fatty oils (abst.) - - - - - 7, 202

GREVILLE, H. L. New residual product from coal gas (abst.) - - - - - 6, 24

GRIESS, P. Reaction for nitrous acid (abst.), 1, 105 : New class of ammonium compounds (abst.), 2, 224 : Action of cyanogen on picraminic acid (abst.), 4, 264 : Introduction of the azo-group, in the aromatic para-compounds (abst.), 7, 32 : Experiments on diazo-compounds (abst.) - - - - - 8, 51

GRIESSMAYER, V. Coloring-matter of wine, etc. (abst.) - - - - - 1, 578

GRIFFITHS, A. B. Chemical and microscopical researches on the cell-contents of certain plants (abst.), 5, 101 : Value of ferrous sulphate as a manure for certain crops (abst.), 6, 77 : Occurrence of a phenol in the stem and leaves of *Pinus sylvestris* (abst.), 6, 93 : Chlorophyll probably a compound of iron with one of the glucosides (abst.), 6, 238 : On a recent discovery of a

paraffin shale deposit in Servia (abst.), 6, 244 : Application of iron sulphate in agriculture and its value as plant food (abst.), 7, 54

GRIFFITHS, A. B., and E. C. Conrad. Estimations of the amount of salicylic acid in the *paday* (abst.), - - - - - 6, 233

GRIFFITH, A. B., and C. Platt. Composition of pelagine, - - 17, 877

GRIMAUX, E. Synthesis of uric acid derivatives of the alloxan series (abst.), 1, 172, 275 : Pseudouric acid (abst.), 1, 389 : New derivative of the parabanic series (abst.), 1, 487 : Action of bromine on quinoline and pyridine (abst.), 4, 242 : Ferric ethylate and colloidal ferric hydroxide (abst.), 6, 92 : Nitrogenized colloid derived from amidobenzoic acid (abst.), 6, 135 : On glyceryl aldehyde (abst.), 9, 101 : On a fermentable carbohydrate (abst.), 10, 78 : On the *m*-pyrazolones of Pinuer and Lifschutz (abst.), - - - - - 10, 82

GRIMAUX, E., and P. Adam. Action of bromine upon dichlorhydrin (abst.), 1, 486 : Action of bromine upon epichlorhydrin (abst.), - - 2, 364

GRIMAUX, E., and L. Lefèvre. Transformation of glucoses into dextrins (abst.), 8, 181 : On dioxethyl acetone (abst.), - - - - - 10, 188

GRIMAUX, E., and J. Tscherniac. Preparation of malonic acid (abst.), 1, 385

GRITTNER, A., and J. Szilasi. Determination of rosin in soaps and fats (abst.), - - - - - 8, 205

GROOT, J. DE. Determination of red coloring-matters in wine (abst.), 4, 191

GROSJEAN, B. J. Determination of nitric nitrogen in guano (abst.), 1, 356 : Determination of tartaric acid in lees and argols (abst.), 1, 369

GROSJEAN, B. J., and R. Warington. Contributions to the chemistry of tartaric and citric acids (abst.), - - - - - 5, 231

GROSSHEINTZ, H. Tetraallylammonium bromide and triallylamine (abst.), - - - - - 1, 387

GROSSMANN, J. Determination of sulphites and thiosulphates (abst.), 1, 89

GROSVENOR, W. M. New solvents for perchromic acid, - - - - 17, 41

GRUNEBERG. Progress of Stassfurt industry (abst.), - - - - - 4, 75

GRUNEWALD, W. *o*-Thioxen and *o*-thiophendicarboxylic acid (abst.), 9, 193

GRUBER, D. See Musculus, F.

GUARESCHI, J. Oxidation of thialdine with nitric acid (abst.), - - 1, 555

GUDEMAN, E. A new method for the determination of vapor densities, 12, 399 : Peculiar reaction of Niagara river water, - - - - 14, 221

GUNNSBERG, R. Simple form of colorimeter (abst.), - - - - - 1, 91

GUNTHER, A., and B. Tollens. Fucose, from sea weed, an isomer of rhamnose (abst.), - - - - - 12, 476

GUERIN, G. Determination of phosphoric acid in urine (abst.), - - 4, 197

GUICHARD, [M.] Detection of Bordeaux-red in wines (abst.) - - 4, 191

GUIGNET, E. Extraction of the green material of leaves, etc. (abst.), 7, 141

GUILLEMIN, G. Alloys of cobalt and copper (abst.), - - - - - 7, 285

GUINOCHEZ, E. Aconitates (abst.), - - - - - 4, 231

GULDBERG, C. M., and P. Waage. Chemical affinity (abst.), - - 1, 295

GUMPERT, F. Phenylcyanate (abst.), - - - - - 7, 174

GUNNING, J. W. Possibility of fungoid growth in atmosphere free

from oxygen (abst.), 2, 136 : Modification of the Kjeldahl method (abst.), - - - - - 11, 54

GUNTZ, [M]. Heat of formation of some fluorides (abst.), 6, 36 : Heat of neutralization of bases with hydrofluoric acid (abst.), 6, 37 : On the fluorides of sodium (abst.), 6, 74 : Heat of formation of fluoride, chloride, and oxychlorides of antimony (abst.), 6, 157 : See also Berthelot, M.

GUSTAVSON, G. Reactions in presence of aluminum chloride and bromide (abst.), 2, 172 : Aromatic bromine compounds from paraffin (abst.), - - - - - 6, 95

GUTHRIE, F. B. On the solubility of certain salts in fused sodium nitrate (abst.), - - - - - 7, 53

GUYARD, A. Note on the carminaphte of Laurent (abst.), 1, 272 : Potassium biniode (abst.), 1, 384 : Action of oxalic acid on chlorates, bromates and iodates (abst.), 1, 384 : Separation and determination of chlorine, bromine and iodine (abst.), 1, 384 : Catalytic phenomena caused by viscosity (abst.), 1, 386 : Copper ammonium oxyferrocyanide (abst.), 1, 388 : Special law applicable to metallic ferrocyanides (abst.), 1, 388 : Atomic weight of uranium (abst.), 1, 527 : Researches on nitrogen iodide (abst.), 6, 34 : Researches on the double iodide of copper and nitrogen (abst.), 6, 34 : Note on furfuraldehyde (abst.), 6, 132 : Synthesis of tartaric glucoside (abst.), 6, 132 : Note on analysis of soils (abst.), 6, 168 : Note on determination of ammoniacal nitrogen in soils (abst.), 6, 169 : Note on separation and determination of lime (abst.), 6, 169 : Action of air on solutions of tannin, etc. (abst.), - - - - - 6, 171

GUYARD, A., (Hugo Tamm). Estimation of oxides of nitrogen as ammonia (abst.), - - - - - 4, 160

GUYOT, P. On alunite (abst.), - - - - - 5, 117

GUYOT, P., and R. Bidaux. Detection of coralline and fuchsine in wine (abst.), - - - - - 1, 576

HAACKE, A. Kieselguhr and its technical application (abst.), - - - - - 6, 140

HAAS, B. Determination of sulphurous acid in wines (abst.), - - 4, 192, 205

HAAS, H. See Hilger, A.

HABERMANN, J. Glycyrrhizin (abst.), - - - - - 2, 180

HADDOCK, A. G. Titration of sulphuric acid (abst.), - - - - - 1, 330

HAGELBERG, L. Sulphocyanogen and selenocyanogen compounds (abst.), - - - - - 12, 231

HAGEN, M. Lupanine from the seeds of *Lupinus angustifolius* (abst.), - - - - - 7, 247

HAGER, H. Examination of mustard-oil (abst.), - - - - - 8, 87

HAHN, E. See Städel, W.

HAHN, H. C. Specific gravity of sodium chloride solutions, - - - - - 20, 621

HAKE, C. N. Note on the Stassfurt potash industry (abst.), - - - - - 6, 24

HAKE, H. W. See Dupré, A.

HALBERSTADT, W. Vanadium trichloride from vanadium trisulphide (abst.), - - - - - 5, 50

HALE, A. C. Ninth general meeting : announcements, - - - 16, 575

HALEY, E. J. Report on recent methods in fertilizer analysis, - - 15, 217

HALL, V. J. Simple fat extractor (note), - - - 19, 586

HALLER, A. Carbonic ether of borneol (abst.), 4, 76 : Essential oil of savory (abst.), 4, 77 : Campholurethane (abst.), 4, 235 : Two stereoisomeric campholurethanes (abst.), 6, 163 : Action of alcoholic potash on urea, thiourea, and substituted ureas (abst.), 8, 166

HALLOCK, A. P. Estimation of sulphuretted hydrogen in gas by direct weight, 4, 177 : Carl H. Schultz (obituary), - - - 19, 676

HALLOCK, E. J. Paranitro- and paramido-phenetol (abst.), - - - 1, 485

HAMBURG, E. W. Determination of iron in organic substances (abst.), - - - 1, 347

HAMBURGER, S. Injury done to vegetation by gases arising from certain manufacturing processes (abst.), - - - 6, 198

HAMILTON, C. C. See Bigelow, W. D.

HAMMARSTEN, O. On the sulphur contained in casein and the determination of sulphur in protein substances (abst.), - - - 8, 60

HAMNER, S. G. See Howe, J. L.

HANCOCK, D. Preparation of standard iodine solutions, - - - 16, 431

HANDY, J. O. The exact determination of phosphorus by the molybdate method in iron, steel, and ores, which contain arsenic, 16, 231 : Barium hydroxide as an absorbent in carbon determinations in steel, 17, 247 : Aluminum analysis, - - - - - 18, 766

HANKO, W. Apparatus for determination of nitrogen by Dumas' method (abst.), - - - - - 1, 375

HANNIN, F. See Rindell, A.

HANRIOT, M. Constitution of epichlorhydrin (abst.), 2, 91 : Action of sodium on epichlorhydrin (abst.), 2, 91 : On strychnine (abst.), 6, 92 : Decomposition by heat of acids of the aliphatic series (abst.), - - - - - 8, 25

HANTZSCH, A., and A. Werner. Stereochemistry in molecules containing nitrogen (abst.), - - - - - 12, 166

HANTZSCH, A., and A. Zeckendorf. Derivatives of β -quinonenedicarboxylic ester (abst.), - - - - - 9, 213

HAPP, J. β -Quinolinesulphonic acid (abst.), - - - - - 6, 236

HARCOURT, A. V. New unit for photometric measurements (abst.), 1, 373

HARDIN, M. B. Flame reactions of silver, P. 1, 2, 33 : Determination of calcium as carbonate after precipitation as oxalate, - - P. 2, 126

HARDIN, W. L. Atomic masses of silver, mercury, and cadmium by the electrolytic method, 18, 990 : Atomic mass of tungsten, - - 19, 657

HARDTUNG, E. See Post, J.

HARDY, H. J. See Arnold, J. O.

HARE, C. L. New table for qualitative separation of metals of iron group, - - - - - 17, 537

HARNACK, E. Determinations of sulphur in ash-free albumin (abst.), 12, 176

HAROLD, J. F. X. Derivatives of silicon tetrachloride, - - - - 20, 13

HARRIS, E. P. New gas generator, - - - - - 17, 809

HARRIS, H. B. Volumetric determination of cobalt, 20, 173 : See also Smith, E. F.

HARRISON, J. B., and J. Williams. The proportions of chlorine and of nitrogen as nitric acid and as ammonia in certain tropical rain waters, - - - - - 19, 1

HART, E. Nitrosulphobenzoic acid and some derivatives (abst.), 2, 44 : On condensation, especially on the condensation of nitric acid, 17, 576 : Points in the distillation of nitric acid, 17, 580 : Purification of glucinum salts, - - - - - 17, 604

HART, P. On the concentration of sulphuric acid (abst.), - - - - - 6, 244

HARTLEY, W. N. Researches on relation of molecular structure of carbon compounds to their absorption spectra (abst.), 4, 144 : Photographs of ultra-violet spectra (abst.), 4, 169 : Contributions to chemistry of cerium compounds (abst.), 4, 202 : Analysis of rhabdophane (abst.), 4, 202 : On the spectrum of beryllium and its relative position among the elements (abst.), 5, 115 : Homologous spectra (abst.), 5, 236 : Spectrum photography in relation to quantitative analysis (abst.), 6, 243 : Absorption spectra of the alkaloids (abst.), - - - - - 6, 309

HARTMAN, W. E. See Campbell, E. D.

HARTMANN, A. Action of phosgene on *o*-diamines (abst.), - - - - - 12, 228

HARTMANN, A., and Schulze. Lanolin, - - - - - 8, 109

HARTWIG, E. Wine oil (abst.), - - - - - 1, 296

HARZ, C. O. Microscopic examination of well water (abst.), - - - - - 1, 367

HASSELT, A. VAN. Determination of boiling-points (abst.), - - - - - 1, 376

HASTINGS, C. S. On Lockyer's hypothesis that the elements are compound (abst.), - - - - - 1, 113

HAUSKNECHT, W. See Gattermann, L.

HAUTEFEUILLE, P., and J. Chappuis. Composition and molecular weight of pernitric acid (abst.), 4, 237 : Liquefaction of ozone (abst.), - - - - - 4, 238

HAUTEFEUILLE, P., and A. Perrey. Aluminum oxychlorides (abst.), 7, 284

HAWLICZEK, J. See Lippmann, E.

HAYCRAFT, J. B. Determination of uric acid (abst.), - - - - - 8, 78

HAYES-CAMPBELL, J. See Cushman, A. S.

HAZARD, J. Estimation of quartz in rocks and clays (abst.), - - - - - 6, 239

HAZEN, A. Measurement of colors of natural waters, - - - - - 18, 264

HAZURA, K. See Bauer, A.

HEATH, G. L. Estimation of sulphur in refined copper, 17, 814 : Cheap adjustable electrolytic stand, 18, 558 : Improvements in colorimetric tests for copper, 19, 24 : New calibrated weighing flask, 19, 198 : Study of methods for the estimation of sulphur in coal, - - - - - 20, 630

HEATON, C. W. Zinc in drinking water (abst.), - - - - - 6, 77

HECHT, O. See Iwig, F.

HECKEL, E. Analysis of kola nuts (abst.), - - - - - 4, 234

HEHNER, O. Pavly's method for determination of glucose (abst.),

1, 341 : Determination of phosphoric acid (abst.), 1, 538 : Analysis of milk (abst.), 4, 188 : Analysis and composition of bees-wax (abst.), 6, 170 : Estimation of glycerol in soaps, etc. (abst.), 10, 182 : Natural aperient bitter waters (abst.), 10, 183

HEHNER, O., and C. A. Mitchell. On the determination of stearic acid in fats, 19, 32

HEHNER, O., and H. D. Richmond. New method of folding filter-papers (abst.), 9, 175

HEIDENHAIN, H. Determination of organic matter by moist oxidation, 15, 71 : Determination of carbon dioxide by absorption, 18, 1

HEIM, R. See Weber, A.

HEINRICH, [M]. Determination of dextrose and inverted sugar in presence of saccharose (abst.), 1, 344

HEINZELMAN, G., and L. Spiegelberg. Pentabrombenzenesulphonic acid (abst.), 2, 186

HELD, A. Note on ethyl- and methyl-acetylcyanate of ethyl (abst.), 6, 164

HELL, C., and P. Schoop. Dibromcapric acid (abst.), 1, 292

HELL, C., and F. Urech. New combination of carbon with sulphur and bromine (abst.), 4, 226 : Action of bromine on carbon bisulphide (abst.), 5, 26

HELL, C. See also Gantter, F.

HELLON, R. See Tascherniac, J.

HEMBERT, F., and L. Henry. New process for producing hydrogen (abst.), 8, 59

HEMPEL, W. Determination of hydrogen gas by absorption (abst.), 1, 371 : Fractional combustion of hydrogen in gaseous mixtures (abst.), 1, 372 : Limits to detection of carbon monoxide (abst.), 1, 556 : Gas furnace with arrangement for oxidation (abst.), 1, 585 : Determination of nitrous oxide (abst.), 4, 160 : Behavior of different forms of carbon towards iron at high temperatures (abst.), 8, 72 : Combustion under high pressure (abst.), 12, 349

HENDESS, H. See Gabriel, S.

HENNINGER, A. Presence of glycol in wine (abst.), 4, 242 : Products of the reduction of erythrol by formic acid (abst.), 6, 133

HENRY, L. Monochlorallyl alcohol and its derivatives (abst.), 5, 119: See also Hembert, F.

HENZOLD, O. See Kreusler, U.

HERMANN, R. Specific gravities and atomic volumes of the metals of the cerium group, etc. (abst.), 1, 295

HERRMANN, P., and B. Tollens. The sugar in *Symporicarpus racemosus* (abst.), 7, 208

HERRMANN, P. See also Freund, M.

HERROUN, E. F. Volumetric determination of antimony (abst.) 4, 167

HERTY, C. H. Mixed double halides of platinum and potassium, 18, 130

HERTY, C. H., and T. R. Boggs. Study of the mixed halides and halothiocyanates of lead, 19, 820

HERTY, C. H., and J. G. Smith. Mercuric chlorothiocyanate, 18, 906

HERTZ, J. Volhard's method for determination of silver, etc. (abst.), 1, 535

HERZFIELD, A. Acetyl compounds of some carbohydrates, etc. (abst.), 2, 225

HERZIG, J. Two new cyanuric acids (abst.), - - - - - 1, 289

HESS, F. Separation of nitroglycerol from nitrocellulose (abst.), - - - - 1, 366

HESS, F., and J. Schwab. Determination of nitrogen in nitroglycerol (abst.), - - - - - 1, 102

HESS, W. See Bernthsen, A.

HESSE, O. Dicinchonine (abst.), 7, 82 : Benzoyl derivatives of aromatic amines (abst.), 7, 245 : Cupreine and homoquinine (abst.), 7, 247

HEUMANN, K. Reactions of silver ultramarine (abst.), 1, 163 : Nomenclature of complex azo compounds (abst.), 5, 24 : Burning of sulphur with white phosphorescent flame (abst.), - - - - - 5, 65

HEUMANN, K., and P. Köchlin. Sulphuryl chloride with non-metals and with tin (abst.), - - - - - 4, 261

HEUMANN, K. See also Billitz, G.

HEYMANN, P. See Gabriel, S.

HIBBARD, P. L. Quick estimation of starch, - - - - - 17, 64

HIBBS, J. G. Atomic weights of nitrogen and arsenic, - - - - - 18, 1044

HIBBS, J. G., and E. F. Smith. Action of metallic magnesium upon manganese salts, - - - - - 16, 822

HIBBS, J. G. See also Smith, E. F.

HIGGIN, A. Dibenzoylaniline and its isomers (abst.), 4, 171 : See also Cross, C. F.

HILDITCH, T. Determination of the atomic weight of oxygen (abst.), 6, 48

HILFAHRT, H. Modification of Kjeldahl's method (abst.), - - - - - 7, 291

HILGARD, E. W. The chemical and physical investigation of soils, - - 16, 34

HILGER, A. Detection of ethyldiactic acid in urine (abst.), 1, 254 : Solanine and its decomposition products (abst.), 1, 255 : Properties of coloring-matter of red wine, etc. (abst.), - - - - - 1, 578

HILGER, A., and H. Haas. Separation and determination of tin and titanium (abst.), - - - - - 12, 175

HILL, J. W. Hygiene of water, - - - - - 19, (18)

HILLEBRAND, W. F. Occurrence of barium and strontium in silicate rocks, 16, 81 : Estimation of small amounts of barium and strontium in silicate analysis, 16, 83 : Plea for greater completeness in rock analysis, 16, 90 : Warning against use of fluoriferous hydrogen peroxide in estimating titanium, 17, 718 : Colorimetric estimation of small amounts of chromium, 20, 454, (49) : Volumetric estimation of vanadium in presence of small amounts of chromium, 20, 461, (65) : See also Noyes, W. A.

HIMLY, C. Testing water for bacteria (abst.), - - - - - 1, 103

HINDS, J. I. D. Improved ureometer, 15, 650 : Hydrogen sulphide generator, 17, 420 : Photometric method for the quantitative determination of lime and sulphuric acid, - - - - - 18, 661

HINE, S. K. See Mason, W. P.

HINSBERG, O. Quinoxaline (abst.), - - - - - 6, 308

HINTZ, E. See Fresenius, R.

HIRSCHLER, A. Influence of carbohydrates and fatty bodies on the putrefaction of albumin (abst.), - - - - - 8, 230

HITCHCOCK, Fanny R. M. Tungstates and molybdates of the rare earths, 17, 483, 520: Reduction of metallic oxides at high temperatures, - - - - - 20, 232

HJELT, E. On caprolactone (abst.), 4, 270: Action of water on isodibromcaproic acid (abst.), 4, 270: Oxypropylmalonic acid and its lactone (abst.), 4, 270: Action of bromine on allylmalonic acid (abst.), 4, 271: On dilactones (abst.), 4, 271: Action of hydrobromic acid and bromine on diallylactic acid (abst.), 4, 271: On the boiling-points of lactones (abst.), 4, 271: On the formation of lactones (abst.), 4, 271: Allylsuccinic acid and a carbocaprolactonic acid (abst.), - - - - - 5, 69

HOCHSTETTER, H. W. Preparation of sodium benzenesulphonate, 20, 549: See also Hoffmann, L. W.

HODGKIN, J. See Howard, D.

HODGKINSON, W. R., and F. E. Matthews. On some derivatives of fluorine (abst.), - - - - - 5, 99

HODGSON, E. H. Determination of sulphur in asphalt, - - - - 20, 882, (64)

HÖLZ, O. See Roll, G.

HÖNIG, M., and M. Rosenfeld. Contributions to the knowledge of certain sugars (abst.), - - - - - 1, 162

HOERMANN, J. VON. Action of hydrocyanic acid on epichlorhydrin (abst.), 1, 160: See also Liebermann, C.

HOFFMANN, E. Test for phenol (abst.), - - - - - 1, 546

HOFFMANN, L., and W. Königs. Tetrahydroquinoline (abst.), - - - - - 5, 241

HOFFMANN, L. W., and R. W. Hochstetter. New form of water-oven and still, - - - - - 17, 122

HOFFMANN, A. W. Aromatic bases isomeric with mustard oil and other sulphocyanides (abst.), 2, 93: Action of bromine in alkaline solutions on the amides (abst.), 5, 21: Preparation of the amides of monobasic acids of the fatty series (abst.), 5, 25: Preparation of mustard oils (abst.), 5, 26: On conhydrine (abst.), 5, 53: Action of bromine in alkaline solution on amines (abst.), 5, 129: Observations on piperidine and pyridine (abst.), 5, 131: Letter from, - - - - - 6, 209

HOGG, T. W. Influence of sulphur on Eggertz's carbon color test (abst.), 10, 115: New mixture for separating carbon from pig iron, steel, etc. (abst.), - - - - - 10, 156

HOHENHAUSEN, J. VON. Separation of benzene, toluene, and xylene from crude tar, naphtha, etc. (abst.), - - - - - 6, 101

HOLLY, H. A. See Cameron, F. K.

HOLZNER, G. Determination of alcohol in fermented liquors (abst.), 1, 573

HONIGMANN, M. Improvement in Solvay process (abst.), - - - - - 4, 74

HOOD, J. On the estimation of iron by permanganate in the presence of hydrochloric acid (abst.), - - - - - 6, 312

HOOD, J. J., and A. G. Salamon. Desulphurizing coal gas (abst.), - - - - - 9, 223

HOOGEWERFF, S., and W. A. van Dorp. Oxidation of quinine by

means of potassium permanganate (abst.), 1, 80, 169 : Pyridinecarboxylic acids (abst.) 2, 96 : Pyridinetricarboxylic acid from alkaloids of quinine group (abst.) - - - - - 2, 172

HOOKER, S. C. See Bamberger, E., and Japp, F. R.

HOOPER, D. Gymnemic acid (abst.) - - - - - 10, 191

HOPKINS, C. G. Safety distillation tube for rapid work in nitrogen determinations, 18, 227 : The oil of corn, 20, 948 : Some errors in the determination of nitrogen, 20, 961 : Condenser for extraction work, - - - - - 20, 965

HOPKINS, N. M. Electric furnaces for the 110-volt circuit, - - - - - 20, 769

HORBACZEWSKI, J., and F. Kanera. Influence of glycerol and fat on secretion of uric acid in man (abst.) - - - - - 8, 185

HORNBURGER, R. Determination of alkalies in ashes of plants (abst.), 1, 357

HORNE, W. D. Automatic extractor, 15, 270 : Rapid and accurate analysis of bone-black, 17, 51 : Decarbonization of bone-black - 17, 503

HORSIN-DÉZON, P. Neutral sugar and inverted sugar (abst.), 1, 488 : Palm sugar from Calcutta (abst.), 1, 488 : Neutral sugar and inverted sugar (abst.) - - - - - 2, 364

HORSTMANN, A. Relative affinity of oxygen for hydrogen and carbon monoxide (abst.) - - - - - 1, 164

HORTON, H. E. Fermentation of glucose syrups, 16, 808 : Alkali and sulphurous acid processes used in the manufacture of starch, 17, 68 : Use of sulphurous acid in manufacture of glucose syrup and grape-sugar, 17, 281 : Acidity of glucose syrup and grape-sugar, 17, 402 : Ash in glucose syrup and grape-sugar - - - - - 17, 403

HORTON, W. A. See Austen, P. T.

HOSÄUS, H. Pentaglycerol, 15, 707 : Lactone from pyrotartaric acid and formaldehyde, 15, 707 : See also Tollens, B.

HOUGH, G. J. A new electrolytic stand, 20, 268 : Aluminum used as an electrode, - - - - - 20, 302

HOUZEAU, A. New form of dropping glass (abst.) - - - - - 1, 379

HOWARD, C. D. Exact dilution of liquid reagents by formula (note), 19, 587

HOWARD, D., and J. Hodgkin. New alkaloid from cinchona bark (abst.) - - - - - 4, 168

HOWE, J. L. Ruthenium and its nitrosochlorides, 16, 388 : Contributions to the knowledge of ruthenocyanides, - - - - - 18, 981

HOWE, J. L., and H. D. Campbell. New ruthenocyanides and the double ferrocyanide of barium and potassium, - - - - - 20, 29

HOWE, J. L., and S. G. Hamner. Color of sulphur vapor, - - - - - 20, 757

HOWE, J. L., and P. S. Mertins. Reinsch's test for arsenic and antimony, - - - - - 18, 953

HOWE, J. L., and E. A. O'Neal. Formation of alums by electrolysis, 20, 759

HÜBNER, H. Nitrosalicylic acids, and isomerisms of benzene derivatives (abst.) - - - - - 1, 233

HÜPFNER, G. Contributions to the chemistry of bile (abst.), 1, 493 : New form of spectrophotometer (abst.) - - - - - 1, 583

HUGOUNENQ, L. Amyl monochloracetate (abst.), 8, 74 : Presence of

levorotary β -oxybutyric acid in the blood of a diabetic patient (abst.), - - - - - 9, 113

HUGOUNENQ, L., and J. Morel. A new double carbonate of potassium and sodium (abst.), - - - - - 10, 77

HUMMEL, J. J., and A. G. Perkin. New compounds of haematein and brazilein (abst.), - - - - - 4, 260

HUMFIDGE, T. S. On the atomic weight of glucinum (abst.), - - - - - 7, 113

HUNT, C. Gaseous fuel applied to the heating of gas retorts (abst.), 6, 105

HURTER, F. Determination of cyanogen in soda lyes (abst.), 1, 108: An attempt to utilize waste heat by Perkin's pipes (abst.), 6, 106: See also Gaskell, H.

HURTY, J. N. On the determination of crude fiber in cereals - - - - - 19, (39)

HUTCHINSON, C. C. Disposal of sewage sludge (abst.), - - - - - 6, 103

HYDE, F. S. Scheme for identification of acetanilide, phenacetine, quinine sulphate, etc., 17, 933: Preparation of sodium nitroprusside, 19, 23: Modification of the thalloquin test for quinine, - - - - - 19, 331

IHL, A. Preparation of axle grease (abst.), - - - - - 8, 26

ILES, M. W. Oxidation of xenesulphonic acids, P. 2, 15: Blow-pipe experiments upon chloride, bromide, and iodide of silver, P. 2, 74: See also Remsen, I.

ILOSVAY, L. Nitrous acid in the atmosphere (abst.), 12, 69: See also Berthelot, M.

IRVINE, R. Action of bleaching agents upon ink (abst.), - - - - - 9, 224

IRVING, A. Ancient mortars (abst.), - - - - - 10, 158

ISAMBERT, F. Phenomena of dissociation (abst.), - - - - - 6, 75

ISBERT, A., and J. Stutzer. Determination of phosphoric acid (abst.), 9, 218

ISTEL, E. See Claus, A.

IWIG, F., and O. Hecht. Products of the dry distillation of some silver salts of fatty acids (abst.), - - - - - 8, 64

JACKSON, C. L. Researches on the substituted benzyl compounds (abst.), - - - - - 1, 282

JACKSON, H. Action of sulphuric acid upon potassium iodide (abst.), 5, 232: On the determination of hardness in waters (abst.), - - - - - 6, 170

JACKSON, O. R. See Baeyer, A.

JACOBJ, C. Review of the Knop-Hufner method for the determination of urea (abst.), - - - - - 7, 292

JACOBSEN, E., and P. Julius. Condensation products of cinnamic acid and gallic acid (abst.), - - - - - 9, 196

JACOBSEN, O. Fusion of potassium mesitylenesulphonate with potassium hydroxide (abst.), 1, 252: 1,2,4-*o*-Xylidine (abst.), 6, 162: Nitro-*o*-toluic acid (abst.), 6, 163: Action of sulphuric acid on bromodurene (abst.), - - - - - 9, 215

JACOBSEN, O., and R. Neumeister. Bromchloral, chlorbromal, bromochloroform and chlorobromoform (abst.), - - - - - 4, 269

JACQUELAINE, V. A. Pure carbon for electric light (abst.), - - - - - 4, 235

JACQUEMART. Reagent for detection of alcohol (abst.), - - - - - 1, 339

JACQUEMIN, G. Preparation of cyanogen in the wet way (abst.), 7, 172

JAFFE, S. H. Detection of salicylic acid in foods (abst.) - - - - 8, 278

JAHN, H. Action of phosphonium iodide on bisulphide of carbon (abst.), 2, 171 : Vapor density of bromine (abst.) - - - - 5, 26

JAHN, E. Occurrence of carvacrol in the essential oil of *Satureia hortensis* (abst.), 5, 24 : Trigonelline (abst.) - - - - 9, 215

JAILLARD, P. Detection of adulterations in oil of geranium (abst.) - - - - 1, 105

JAKSCH, R. VON. Occurrence of volatile fatty acids in urine (abst.) - - - - 8, 86

JAMES, J. W. Ethylene chlorobromide and some of its derivatives (abst.) - - - - 5, 93

JAMES, W. Ethylene chlorosulphocyanide and β -chlorethylsulphonic acid (abst.) - - - - 2, 134

JANNETTAZ, E. Note on the observations of Spring (abst.) - - - - 6, 38 : Note on development of schistocyt in compressed bodies (abst.) - - - - 6, 38

JANOVSKY, J. V. Niobite of the Iser mountains (abst.) - - - - 2, 171 : On the direct substitution products of azobenzene (abst.) - - - - 5, 54

JAPP, F. R. α - and β -phenanthrenecarboxylic acids, and on the constitution of phenanthrene (abst.) - - - - 2, 347 : Constitution of lophine (abst.) - - - - 5, 91 : Condensations of compounds which contain the dicarbonyl group with aldehydes and ammonia (abst.) - - - - 5, 101

JAPP, F. R., and S. C. Hooker. Action of aldehydes and ammonia on benzil (abst.) - - - - 7, 31

JAPP, F. R., and H. H. Robinson. Constitution of amarine and lophine (abst.) - - - - 4, 225

JAPP, F. R., and F. W. Streatfield. Action of aldehydes on phenanthraquinone in presence of ammonia (abst.) - - - - 4, 198 : Action of acetone on phenanthraquinone, etc. (abst.) - - - - 4, 221 : Condensation product of phenanthraquinone with ethyl acetoacetate (abst.) - - - - 5, 92 : Application of aldehyde and ammonia reaction in determining constitution of quinones (abst.) - - - - 5, 199

JAWERIN, L. Hexylenes from tertiary hexyl alcohols (abst.) - - - - 1, 251 : See also Beilstein, F.

JAY, [M]. Influence of sugar on the determination of urea in urine (abst.) - - - - 2, 132

JAY, R. See Curtius, T.

JEAN, F. Determination of tannic and oenogallic acid in wine (abst.) - - - - 4, 191, 233 : Clarification of champagne wines (abst.) - - - - 4, 234 : Determination of tannic acid (abst.) - - - - 7, 249

JENKINS, E. H. See Johnson, S. W.

JEWETT, F. F. Arrangement for washing precipitates with boiling water - - - - 17, 517

JEWETT, J. Influence of acetic acid on separation of iron, etc. (abst.) - - - - 1, 484

JOANNIS, A. Heat of formation of hydroferricyanic acid (abst.) - - - - 4, 231 : Hydroferrocyanic acid (abst.) - - - - 4, 231 : Hydroferricyanic acid (abst.) - - - - 4, 232 : Heat of formation of hydroferricyanic acid and of some ferricyanides (abst.) - - - - 4, 233 : Heat of formation of sulphocyanic acid and some sulphocyanates (abst.) - - - - 4, 234

JÖRGENSEN, S. M. Bromopurplecobalt salts (abst.) - - - - 1, 295 : Con-

tributions to chemistry of chrom-ammonium compounds (abst.), 2, 290

JOHANSON, E. Determinations of alkaloids in cinchona bark (abst.), 1, 552

JOHNSON, E. S. Some apparatus for the technical analytical laboratory, - - - - - 19, 281

JOHNSON, S. H. On the filtration of potable water (abst.), - - - - - 6, 140

JOHNSON, S. W. Determination of nitrogen by combustion with calcium hydroxide (abst.), 6, 168 : The determination of phosphoric acid, 16, 462 : Composition of wood gum, - - - - - 18, 214

JOHNSON, S. W., and E. H. Jenkins. Determination of nitrogen in analysis of agricultural products (abst.), 1, 281, 351: On a method for the determination of phosphoric acid (abst.), 1, 281 : Rapid and exact method for determination of phosphoric acid (abst.), 1, 352

JOHNSTONE, A. Detection of antimony in minerals (abst.), - - - - - 10, 173

JOHNSTONE, W. Use of acetic acid in milk analysis (abst.), 8, 205 : Substitution of asbestos cloth for blotting-paper in milk analysis (abst.), 9, 175 : Does lead acetate precipitate hop bitters? (abst.), 9, 176

JOLLES, A. Potassium manganate and its analytical importance (abst.), 9, 119; Determination of bile constituents in urine (abst.), 12, 414 : New test for albumin (abst.), 12, 415 : Determination of albumin in bacterial urine (abst.), - - - - - 12, 415

JOLY, A. Saturation of phosphoric acid by bases (abst.), 4, 232 : Preparation of arsenic acid (abst.), 7, 285 : Preparation of phosphoric acid (abst.), - - - - - 8, 70

JONES, E. W. T. Specific gravity of fat at 100°, etc. (abst.), - - - - - 10, 157

JONES, J. Determination of manganese in manganese bronze, - - - - - 15, 414

JORDAN, F. See Frankland, P. F.

JORISSEN, A. Test for nitrites in water (abst.), 4, 163 : Separation of small amount of cobalt from nickel (abst.), 4, 166 : Furfural in fermented liquids (abst.), 4, 268 : Detection of nitrates in potassium chlorate (abst.), - - - - - 9, 174

JOWANOWITSCH, M. K. Decomposition of tartaric acid in the presence of glycerol at a high temperature (abst.), - - - - - 8, 110

JÜPTNER, H. VON. Separation of gold and silver (abst.), 1, 99 : Wiborgh's gas-volumetric method for determination of carbon in iron and steel (abst.), - - - - - 10, 68

JULIAN, F. Laboratory notes, - - - - - 15, 113

JULIEN, A. A. Examination of carbon dioxide in the fluid cavities of a topaz, - - - - - 3, 41

JULIUS, P. Behavior of silver chloride, bromide, and iodide, towards bromine and iodine (abst.), 5, 245 : See also Jacobsen, E.

JUNGFLEISCH, E. Synthesis of optically active compounds (abst.), 6, 74: On the decomposition of compounds optically inactive by compensation (abst.), - - - - - 6, 90

JUNGFLEISCH, E., and E. Léger. Researches on the optical isomers of cinchonine (abst.), - - - - - 10, 80

JUTZ, G. W. Monochlorocinnamic acid (abst.), - - - - - 5, 22

KACHLER, J. Compounds of the camphor group (abst.), - - - - - 2, 179

OCT 5 1919

SO★ INDEX OF AUTHORS.

KADE, R. Action of chlorine on dibenzyl (abst.) - - - - - 1, 497

KAEHLER, M. Improved filter-disk, - - - - - 16, 58

KAEMMER, G. Determination of tartaric acid in crude tartar, argols, etc. (abst.) - - - - - 7, 88

KAHLENBERG, L. Speed of reduction of ferric chloride by stannous chloride, - - - - - 16, 314

KALISCHER, S. Molecular structure of the metals (abst.) - - - - - 5, 21

KALMANN, W. Standardizing iodine solutions (abst.), 8, 200: See also Oser, J.

KANERA, F. See Horbaczewski, J.

KASSNER, G. Elementary analysis of volatile carbon compounds (abst.) - - - - - 9, 220

KATHREINER, F. Determination of tannin (abst.) - - - - - 1, 102

KAUFFMANN, G. β -naphthalaldehyde (abst.) - - - - - 5, 23

KAWAKITA, M. See Divers, E.

KAYSER, R. Estimation of tartaric acid in wine (abst.) - - - - - 6, 97

KEBLER, L. F. Acidimetric estimation of vegetable alkaloids, 17, 822: Improvements on Dr. Squibb's volumetric method for estimating acetone, - - - - - 19, 316

KEDZIE, R. C. Mineral residues in sprayed fruit, - - - - - 16, 71

KEGEL, O. See Zincke, T.

KEHRMANN, F. Substitution dependent on atomic and molecular magnitude, etc. (abst.) - - - - - 12, 167

KEISER, E. H. See Remsen, I.

KELBE, W. Expulsion of the sulpho group by bromine (abst.) - - - - - 4, 175

KELBE, W., and J. Lwoff. Methyl alcohol obtained by dry distillation of colophony (abst.) - - - - - 5, 123

KELBE, W., and C. Warth. Capronic acid occurring in resin oil (abst.) - - - - - 4, 228

KELLER, E. Distribution of the precious metals and impurities in copper and suggestions for a rational mode of sampling, 19, 243: Notes on selenium and tellurium, 19, 771: Tank residues in electrolytic copper refineries, - - - - - 19, 778

KELLER, H. A. See Keller, H. F.

KELLER, H. F. Symmetrical tetrabromdiacetyl (abst.), 12, 160: The analysis of American refined copper, 16, 785: Recent contributions to our knowledge of metallic reducing agents, - - - - - 16, 833

KELLER, H. F., and H. A. Keller. A new variety of kobellite, - - - - - 7, 194

KELLEY, D. J. Malt wine, - - - - - 19, (30)

KELLEY, J., and E. F. Smith. Action of acid vapors on metallic sulphides, - - - - - 18, 1096

KENDALL, J. A. Method of obtaining benzene from coal gas (abst.) - - - - - 6, 175

KENT, W. H. A modified form of Soxhlet's extractor, 9, 182: Determination of fat in milk, - - - - - 10, 32

KENT, W. H., and B. Tollens. Examination of lactose and galactose (abst.) - - - - - 7, 85

KERSHAW, J. B. C. Improved form of Orsat's apparatus for estimation of oxygen (abst.) - - - - - 6, 97

KESSLER, F. Method of determining manganese in alloys of iron (abst.), 1, 83 : Atomic weight of antimony (abst.), - - - 1, 320

KESTNER. See Scheurer-Kestner.

KIENLEN, P. Commercial analysis of bituminous rocks (abst.), 2, 432

KILGORE, B. W. Estimation of phosphoric acid by titration of the yellow precipitate, 16, 765 : Determination of phosphoric acid by the molybdate-magnesia method, 16, 793 : Determination of phosphorus by molybdate-magnesia method, and by volumetric method, 17, 941 : Estimation of phosphoric acid by titration, etc., 17, 950 : Further communication on the volumetric estimation of phosphoric acid, - - - - - 19, 703

KILIANI, H. On gum arabic (abst.), 4, 174 : Preparation of lactic acid (abst.), 5, 20 : On saccharin (abst.), - - - - - 5, 20

KILIANI, H., and S. Kleemann. Preliminary communication on caprolactone (abst.), - - - - - 6, 162

KINGZETT, C. T. Contributions to the history of putrefaction (abst.), 2, 343 : Camphoric peroxide and barium camphorate (abst.), 6, 91 : Comparative antiseptic values of chlorides, nitrates, and sulphates (abst.), 9, 190: On the manufacture of chlorine, especially by the use of magnesia (abst.), - - - - - 10, 85

KINNEAR, J. B. Reduction of nitrates and nitrites to ammonia in water analysis (abst.), - - - - - 4, 163

KINNICUTT, L. P. Indirect determination of chlorine and bromine (abst.), 4, 161 : Recent work in England on the purification of sewage, - - - - - 20, 185

KIRCHER, G. See Müller, C. L.

KISCH, W. See König, J.

KISSLING, R. Methods for determining nicotine in tobacco (abst.), 4, 195

KJELDAHL, J. Determination of nitrogen in organic bodies (abst.), 5, 243

KLASON, P. Apparatus for preparing chlorine (abst.), - - - - - 12, 155

KLEEMANN, S. See Kiliani, H.

KLEIN, D. Borotungstates (abst.), 2, 432 : Mucates and saccharates analogous to sodium antimonyl tartrate (abst.), 6, 35 : Tellurous anhydride and its combinations with acids (abst.), - - - - - 8, 163

KLEIN, F. Determination of potassium acid tartrate in argol, etc. (abst.), - - - - - 7, 295

KLEIN, J. Constitution of desoxalic acid (abst.), 2, 291 : Use of ammonium thiocarbamate in analyses (abst.), - - - - - 9, 115

KLEIN, L. Determination of carbon in cast iron (abst.), - - - - - 1, 88

KLEINERT, Dr. On the estimation of phenol in creosote oil (abst.), 6, 38

KLEMP, G. Valuation of zinc dust (abst.), - - - - - 12, 503

KLIEBHAN, G. Analysis of different varieties of coals (abst.), 9, 198: Preparation of crystallized chromic acid from lead chromate (abst.), 9, 222

KLINGER, A., and A. Bujard. Adulteration of split peas (abst.), - - 9, 38

KLOOZ, O. T. See Maberry, C. F.

KLOPSCH, R. Determination of fat in oil cake (abst.), - - - - - 10, 157

KNAPP, F. Ultramarine blue from silica by use of heat (abst.), - - 7, 172

KNICHT, E. New isomer of orcinol (abst.), - - - - - 4, 227

KNÖFLER, O. Volumetric determination of alkaline earths and sulphuric acid combined with them (abst.), - - - - - 7, 251

KNORENVAGEL, E. Preparation of dry diazo-salts (abst.), - - - - - 12, 475

KNOP, A. Action of phosphorus pentasulphide on aniline (abst.), 10, 40

KNOP, W. Determination of potassium and sodium in silicates (abst.), 1, 536

KNORR, A. E. Modified method of fine silver assay, 19, 814 : Some new forms of apparatus, - - - - - 19, 817

KNORR, L., and A. Blank. Action of ethyl acetobenzalacetate on phenylhydrazine (abst.), - - - - - 8, 55

KNOX, J. W. T., and A. B. Prescott. The caffeine compound in kola, 19, 63 : The caffeine compounds in kola. II. Kola-tannin, 20, 34

KNYRIM, M. See Zimmermann, J.

KOBÉ, K. See Seubert, K.

KOCH, H. See Fischer, E.

KÖBIG, J. Constituents of oil of Roman camomile (abst.), - - - - - 1, 238

KÖCHLIN, P. See Heumann, K.

KÖHLER, H. Apparatus for determination of solubilities (abst.), 1, 375 : Components of essential oils of some *Ericaceae* (abst.), - - - - - 1, 395

KÖHNLEIN, B. Preparation of paraffins (abst.), - - - - - 5, 130

KÖLLIKER, A. See Wallach, O.

KÖNIG, F. Preparation of succinic acid from tartaric acid by fermentation (abst.), - - - - - 4, 205

KÖNIG, J. Determination of oxygen dissolved in water (abst.), - - - - - 2, 172

KÖNIG, J., and W. Kisch. Analysis of commercial peptones (abst.), 11, 55

KÖNIGS, W. Oxidation products of cinchonine (abst.), 1, 166: Action of phosphorus pentachloride, etc., on cinchonine chloride (abst.), 2, 227 : See also Hoffmann, L.

KÖRNER, G. See Fischer, O.

KÖRNER, M. See Weddige, A.

KÖRTTSTORFER, J. New method of testing butter for foreign fatty bodies (abst.), - - - - - 1, 359, 567

KOHN, O. See Nöltig, E.

KOLBE, H. Composition and basicity of hyposulphuric acid (abst.), 1, 497 : Constitution of isatin (abst.), 7, 57, 173 : Preparation of anthranilic acid (abst.), - - - - - 7, 60

KONINCK, L. L. DE. See De Koninck, L. L.

KONINGH, L. DE. See De Koningh, L.

KOPP, H. Acids obtained in saponification of oil of Roman camomile (abst.), - - - - - 1, 238

KOPPESCHAAR, W. F. Composition and analysis of commercial quinine sulphate (abst.), - - - - - 7, 226

KOSSEL, A. New base found in the animal body (abst.), - - - - - 7, 175

KOSTANECKI, S. VON. See Liebermann, C.

KOUZNETZOFF. Analysis of rotschouberite (abst.), - - - - - 6, 78

KOWALEWSKY, N. Uranium acetate as reagent for albuminoids (abst.), - - - - - 7, 293

KRAMER, G., and A. Spilker. Synthesis of chrysene and related hydrocarbons (abst.), 12, 160 : Cumarone of coal tar (abst.), 12, 162

KRAMER, M. Determination of acetone in wood spirit (abst.), - 4, 196

KRATSCHMER, F. Use of sodium bromate in volumetric analysis (abst.), 7, 296 : Apparatus for determination of nitric acid (abst.), 9, 217

KRAUSE, A. Paraphenylenediamine (abst.), 1, 162 : Note on the diamond (abst.), - 12, 472

KRAUSE, H., and G. Salomon. Formation of xanthine bases from egg-albumin (abst.), - 1, 165

KRAUSE, O. H. Joseph Goldmark, an obituary, - 4, 7

KRAUT, K. Belladonnine (abst.), 2, 173 : On tropine (abst.), - 4, 264

KRESSNER, M. G. See Dietzell, B. E.

KREUSLER, U. Apparatus for reducing measured volumes of gas to normal conditions (abst.), 6, 97 : Digestion furnace for Kjeldahl nitrogen determinations (abst.), - 7, 291

KREUSLER, U., and P. Henzold. Alkaline reaction of glass, a source of error in analysis (abst.), - 6, 97

KRÜGER, P. Derivatives of benzylamidoxime (abst.), - 8, 75

KRÜSS, G. Decomposition of nickel and cobalt (abst.), - 10, 180

KRÜSS, G., and H. Morath. Beryllium (abst.), 12, 154 : Researches on beryllium (abst.), - 12, 472

KRÜSS, G., and K. Ohnmais. Vanadium sulpho salts (abst.), - 12, 472

KRUG, W. H. Some characteristics of California wines, 16, 597 : Determination of tannin by metallic oxides, 17, 811 : Recalculation of Wein's table of starch equivalent to copper, - 19, 452

KRUG, W. H., and J. E. Blomén. Commercial preparation of nitronaphthalenes, - 19, 532

KRUG, W. H., and H. W. Wiley. Solubility of the pentosans in the reagents employed in the estimation of starch, - 20, 266

KRUG, W. H. See Wiley, H. W.

KRUTWIG, J. Detection of silver in metallic lead (abst.), 4, 168 : Separation of iodine and chlorine in the dry way (abst.), - 7, 32

KUBEL, W. Basic magnesium acetate (abst.), - 5, 19

KUHN, B., and O. Saeger. Quantitative determination of arsenic by Marsh's test : action of potassium hydroxide on arsine (abst.), - 12, 353 ; 12, 477

KUHARA, M. Method for estimating bismuth volumetrically (abst.), 2, 43

KUELLMANN, E., Jr. Explosion of a platinum retort used for concentration of sulphuric acid (abst.), - 2, 130

KUHN, O. Detection and estimation of arsenic, sulphur, phosphorus, and other elements, in native copper (abst.), - 6, 241

KULISCH, P. Modification of the Kjeldahl method (abst.), - 8, 81

KUPFERSCHLÄGER, I. On the existence of phosphoric acid in ammonium molybdate (abst.), 6, 98 : Purification of sulphuric acid (abst.), - 7, 244

KURBATOFF, A. See Beilstein, F.

KUTSCHEROFF, M. G. Action of hydrocarbons of the acetylene group on mercuric oxide and salts (abst.), 6, 93 : Action of allylene on mercuric oxide and salts (abst.), - - - - - 6, 167

KUZEL, H. See Fischer, E.

LAAR, C. Contribution to the knowledge of sulphanilic acid (abst.), 2, 291 : Use of diphenylamine and aniline in qualitative analysis (abst.), - - - - - 5, 52

LA BELLONE, F. DE. Process for the medico-legal detection of blood (abst.), - - - - - 10, 88

LACHOWICZ, B. Action of phosphorus chlorides on phenanthra-quinone (abst.), - - - - - 5, 69

LA COSTE, W. Behavior of addition products of quinoline and manahaloid alkyl derivatives towards silver oxide (abst.), 4, 206 : Halogen derivatives of quinoline (abst.), 4, 268 : The bases produced from the products of addition of quinoline and halogenalkyls (abst.), - - - - - 5, 23

LA COSTE, W., and J. Bodewig. Methylformyl-*o*-amidochlorbenzoic acid and methyl-pseudo-chlorisatin from *m*-chlorquinolinemethylchloride (abst.), - - - - - 7, 229

LA COSTE, W., and F. Valeur. β -Quinolinedisulphonic acid (abst.), 10, 21

LADD, E. F. Investigations upon maize, 12, 369 : The proteids of cream, 10, 858 : Humates and soil fertility, - - - - - 20, 861

LADENBURG, A. Artificial alkaloids (abst.), 2, 99 : Tropidine (abst.), 2, 225 : Hyoscyamine (abst.), 2, 225 : Duboisine (abst.), 2, 224 : Contributions to the history of atropine (abst.), 4, 176 : Behavior of diamines with nitrous acid (abst.), 6, 162 : Synthesis of piperidine (abst.), 6, 162 : On the synthesis of piperidine and its homologues (abst.), - - - - - 7, 86

LADENBURG, A., and G. Meyer. Upon daturine (abst.), - - - - - 2, 370

LADENBURG, A., and C. F. Roth. Studies on commercial picoline (abst.), - - - - - 7, 146

LADENBURG, A., and L. Rügheimer. Artificial formation of tropic acid (abst.), - - - - - 2, 370

LADUREAU, A. Phosphoric acid in soils of north of France (abst.), 4, 77

LAFONT, J. Action of crystallizable formic acid on citrenol (abst.), 10, 113 : See also Bouchardat, G.

LAIBLIN, R. Nicotine and nicotinic acid (abst.), - - - - - 2, 55

LAJOUX, H. On woman's milk (abst.), 9, 113 : See also Grandval, A.

LAN, C. Effects of compression on hardness of steel (abst.), - - - - - 4, 235

LAND, W. J. Mica scale-pans, P. 1, 126 : Determination of carbonic acid by loss of weight, - - - - - P. 1, 127

LANDAUER, J. Spectra of salts of saffranine (abst.), - - - - - 1, 374

LANDIS, E. K. Determination of phosphorus (Note), 15, 480 : Indirect analysis of mixtures containing a common constituent, 17, 466 : Indirect analysis, 18, 182 : Standard iodine solution for sulphur determinations, - - - - - 19, 261

LANDOLPH, F. Action of boron fluoride on acetone (abst.), 1, 400 :

Determination of fluorine and boron in organic compounds (abst.), 1, 543: Anethol derivatives (abst.), - - - - - 2, 171

LANDOLT, H. Solid carbon dioxid (abst.), 6, 307: Some laboratory apparatus (abst.), 7, 150: Polaristrobometric analysis, - - - - - 11, 59, 80

LANDSBERG, L. See Baeyer, A., and Erlenmeyer, E.

LANE, N. J. Muter's method for analysis of fats and oils, 15, 110: Determination of sulphuric acid, - - - - - 18, 682

LANGBECK, H. W. Bitter principle in fermented liquors brewed without hops (abst.), - - - - - 1, 363

LANGENBECK, K. Chemistry of the pottery industry of the United States, - - - - - 15, 651, 695

LANGLEY, J. W. Explanation of Gladstone and Tribe's "2/3 law in chemical dynamics" (abst.), 7, 26: Work of the committees on the "international standards for analysis of iron and steel," 15, 448: The use of electrolysis in technical chemical processes - - 16, 49

LANGWORTHY, C. F. A respiration calorimeter: abstract of description by Professors Atwater and Rosa, - - - - - 20, 681

LAPRAIK, W. See Russell, W. H.

LASNE and Benker. Reduction of loss of nitric acid in manufacture of sulphuric acid (abst.), - - - - - 4, 73

LA SOURCE, M. DE. Influence of plaster of Paris on composition and chemical characters of wine (abst.), - - - - - 6, 104

LATSCHINOFF, P. Isocholic acid (abst.), 5, 21: Empirical formula of cholic acid (abst.), - - - - - 10, 37

LAUBENHEIMER, A. On orthodinitro compounds (abst.), - - - - - 4, 269

LAUER, W. E. See Gabriel, S.

LAUR, P. Reduction of silver ores by hydrogen in the wet way (abst.), - - - - - 4, 241

LAURENT, L. Spectroscope of Thollon (abst.), - - - - - 1, 172

LAWES, Sir J. B., J. H. Gilbert and R. Warington. On the chemistry of "fairy rings" (abst.), - - - - - 5, 102

LAWLER, C. J. New aspirator, - - - - - 5, 71

LAWSON, J. A. Action of diazo-compounds on β -naphthylamine (abst.), - - - - - 8, 22

LAZARUS, M. J. On fractional distillation in a current of steam (abst.), - - - - - 7, 251

LE BEL, J. A. Dextrogyric amyl alcohol (abst.), 1, 273: Active methylpropylcarbinol and various fungi which destroy it (abst.), 2, 132

LE BON, G. Employment of powdered borax for preservation of meat (abst.), 1, 173: Two new antiseptics (abst.), - - - - - 4, 242

LECHARTIER, G. Determination of phosphoric acid in soils (abst.), 6, 194

LE CHATELLIER, H. Decomposition of cements by water (abst.), 6, 174: On the decomposition of salts by water (abst.), 7, 140: On the oxidation of silver (abst.), - - - - - 9, 169

LECOQ DE BOISBAUDRAN, P. E. Atomic weight of palladium (abst.), 1, 320: Researches on samarium (abst.), 1, 401: Separation of gallium from iron and zinc (abst.), 4, 168: Separation of gallium

(abst.), 4, 237, 238, 239, 240, 242, 273 : Crystallized oxychloride of gallium (abst.), 4, 233 : Separation of gallium (abst.), 5, 118 : Alloys of indium and gallium (abst.), - - - - - 7, 139

LECRENIER, A. See Koninck, L. L. de, and Spring, W.

LEE, C. T. Method for assay of indigo, - - - - - 6, 185

LEEDS, A. R. Water analysis, P. 2, 1 : Determination of nitric acid by transformation into ammonia, P. 2, 9, 13 : Alkalinity or acidity of potable waters, P. 2, 71 : Presence of nitric acid in healthy urine, and accurate determination of, P. 2, 98 : Alteration of standard ammonium chloride solution when kept in the dark, P. 2, 147 : Titration of hydrochloric acid for chlorine, and of sulphuric and nitric acids for hyponitric acid, P. 2, 149 : Determination of nitrates, P. 2, 150 : Action of potassium permanganate upon oxalic acid, P. 2, 153 : Temperature and volume in generation of ozone, and new form of ozonator, 1, 8 : Titration of hydrochloric acid for chlorine, and of sulphuric and nitric acids for hyponitric acid, 1, 18 : Detection of traces of water in alcohol, 1, 38 : Influence of light upon the decomposition of iodides, 1, 65 : Detection and estimation of nitrous acid in potable waters, 1, 136 : Ammonium nitrite and by-products obtained in ozonation of air, 1, 145 : Solubility of ozone in water, 1, 220 : Action of ozone on coloring-matter of plants, 1, 228 : Bleaching of sugar syrups by ozone, 1, 229 : Reduction of carbon dioxide by phosphorus at ordinary temperatures, 1, 230 : Oxidation of carbon monoxide by air over phosphorus at ordinary temperatures, 1, 232 : Notes on ozone, 1, 431 : Peroxide of hydrogen and ozone, 2, 34, 247 : Action of light and darkness on standard ammonium chloride and tannin solutions, 2, 246 : Action of light on the soluble iodides, with the outlines of a new method of actinometry, 2, 249 : Laws governing the decomposition of equivalent solutions of the iodides under the influence of actinium, 2, 270 : Action of hyponitric anhydride on organic bodies, 2, 277, 416 : Production of ozone by heating substances containing oxygen, 2, 411 : Production of ozone, hydrogen peroxide and ammonium nitrate in ozonation of air by phosphorus, 3, 5 : Action of oxygen, ozone, and nascent oxygen upon benzene, 3, 16 : Direct conversion of aromatic amides into their corresponding azo-compounds, 3, 39 : Adulteration of food, drink, and drugs, from the chemist's standpoint, etc., 3, 60 : Relative purity of city waters in United States, 3, 98 : Compounds of aromatic bases with metallic salts, with a note on thiocarbanilide, 3, 134 : Reduction of metallic oxides in sunlight, 4, 3 : Diphenylamineacrolein, 4, 32 : Acrolein urea, 4, 58 : Contamination of the New York water supply, 4, 127 : Xylidine-acrolein, 5, 1 : Oenanthal-aniline, oenanthal-xylidine, and oenanthal-naphthylamine, 5, 2 : Solid residue from the distillation of castor oil *in vacuo*, 5, 4 : Cryptidine, 5, 7 : Acrolein-urea, with remarks upon Schiff's publications upon condensed ureas, 5, 36 : Analysis of soap, 5, 44 : Oenanthalaniline,

oenanthalxylidine, and oenanthalnaphthylamine (abst.), 5, 66 : Cryptidine (abst.), 5, 67 : Platinum iodide as a reagent for deleterious organic substances in potable waters, 5, 74 : Conversion of carbon monoxide to carbon dioxide by nascent oxygen, 5, 78 : Atomation of oxygen, 5, 205 : Benzreide, 6, 15 : Atomation of oxygen at elevated temperatures, and burning of pure hydrogen and hydrocarbons in pure air, 6, 17 : Estimation of organic-matter according to methods depending on reduction of permanganate (abst.), 6, 41 : Physical and chemical analysis of flour, 6, 56 : Composition and methods of analysis of human milk, 6, 252 : Present and proposed future water supply of the city of Albany, N. Y., 7, 261 : Water supply of Philadelphia, 8, 126 : Actinic method for the determination of organic matter in water, 8, 269 : Method of separation of coloring-matter in butter, etc., 9, 76, 98 : The pollution of the water supply of Jersey City and Newark, 9, 81 : The epidemic of typhoid fever at Mt. Holly, N. J., in 1887, 9, 146 : Determination of carbon and nitrogen in waters, 9, 162 : The aeration and composition of Niagara river water, 12, 449 : The composition of swill milk, 12, 451 : Chemical and physical changes attendant upon sterilization of milk, 13, 34 : Proteids of cow's milk, 13, 72 : Estimation by titration of carbon dioxide in water, 13, 98 : Precipitation of suspended clay by aluminic, ferric, and calcic hydroxides, 13, 100 : Are chemists prepared to abandon Clark's method for estimation of hardness in water, 13, 114 : Acetic acid in vinegar, 17, 741 : Standard prisms in water analysis, and the valuation of color in potable waters, 18, 484 : Bacteria in milk-sugar, - - - - - 18, 687

LEEDS, A. R., and E. Everhart. Action of water and of argentic hydrate upon benzene hexachloride and naphthalene tetrachloride, 2, 205 : Method for analysis of mustard, - - - - - 3, 130

LEFEVRE, L. See Grimaux, E.

LEFFMANN, H., and W. Beam. Effects of food preservatives on the action of diastase (abst.), - - - - - 10, 91

L'HOTE, L. Preparation of vanadyl chloride (abst.), 8, 71 : See also Girard, C.

LÉGER, E. See Jungfleisch, E.

LEHNE, A. Condensation of benzhydrol and naphthalene, - - - - - 2, 369

LELLMANN, E. Diphenylamine and paraditolylamine (abst.), 5, 24 : New class of amidines (abst.), 5, 24 : Naphthalene derivatives (abst.), 6, 87 : New toluylenediamine (abst.), 7, 174 : Constitution of the three dinitro- ρ -xylenes (abst.), 7, 175 : Methods for determining the constitution of aromatic diamines (abst.), - - - - - 7, 174

LELLMANN, E., and E. Würthner. New nitrotoluidine (abst.), - - - - - 7, 175

LEMOINE, G. New sulphur salts from phosphorus trisulphide (abst.), 6, 76 : Hydrocarbons and higher alcohols obtained from American petroleum (abst.), 6, 95 : Reaction between ferric salts and oxalic acid (abst.), - - - - - 8, 198

LENHER, V. Sulphiodide of lead, 17, 511 : Atomic mass and derivatives of selenium, - - - - - 20, 555

LENHER, V., and E. F. Smith. Ammonium selenide, - - - - - 20, 277

LENHER, V. See also Rising, W. B., and Smith, E. F.

LENKEN, C. Discovery of cocaine (abst.), - - - - - 7, 88

LENZ, W. Certain titrations with potassium permanganate (abst.), 7, 90 : Examination of indigo colors (abst.), - - - - - 9, 120

LEONARD, N. Coloration of a coal fire by common salt (abst.), - - - - - 10, 179

LEPRE, F. von. Universal stand for pocket spectroscope (abst.), 1, 379, 397 : Detection of juice of red beets and coloring-matter of red poppies, in wine (abst.), - - - - - 1, 578

LEPINE, R., L. Eymonnet, and P. Aubert. The proportion of imperfectly oxidized phosphorus in urine (abst.), - - - - - 6, 129

LEPLAY, H. Studies on the sugar beet (abst.), 5, 118, 119 : Studies on corn (abst.), - - - - - 5, 120

LEPSIUS, B. Action of the arc light on gases (abst.), - - - - - 12, 351

LERMONTOFF, J. Action of tertiary butyl iodide upon isobutylene in presence of metallic oxides (abst.), - - - - - 2, 54

LE ROV, G. A. Detection of free chlorine in hydrochloric acid (abst.), 12, 73

LEROY, M. Action of amides on bromacetophenones (abst.), - - - - - 9, 195

LESCOUR, H., and A. Rigaut. Solid cyanogen hydride (abst.), 1, 402

LEUCKART, R. Reaction of isomeric monobromcinnamic acids with concentrated sulphuric acid (abst.), 4, 173 : A few reactions of aromatic cyanates (abst.), - - - - - 8, 55

LEVALLOIS, A. Action of solutions of cellulose on polarized light (abst.), - - - - - 6, 93

LEVINSTEIN, I. Quantitative determination of *o*-, *m*-, and *p*-xylene (abst.), 6, 101 : Xylenes from English and Scotch tars (abst.), 7, 89

LEVOIR, L. C. Artificial asbestos, or French chalk, for packing and closing leakages (abst.), - - - - - 7, 214

LEWES, V. Experiments on potassium tetra- and pentathionate (abst.), - - - - - 4, 224

LEWES, V. B. See Cowper, R.

LEWKOWITSCH, J. Preparation of nitro acids of fatty series (abst.), 2, 291

LIDDLE, T. See Smith, W.

LIDOFF, A. Solubility of aniline in solutions of its salts (abst.), 6, 96

LIEBRN, A. Density of chlorine at high temperatures, - - - - - 1, 453

LIEBERMANN, C. Anthracene compounds of chrysazine series (abst.), 1, 290 : Reduction of anthraquinonesulphonic acid (abst.), 1, 291 : Exsiccator for solutions in ether, chloroform, benzene, etc. (abst.), 1, 585 : Azoanthrol dyes (abst.), 4, 266 : Isocinnamic acid present in the alkaloids accompanying cocaine (abst.), - - - - - 12, 161

LIEBERMANN, C., and A. Bischof. The third anthracenecarboxylic acid (abst.), - - - - - 2, 95

LIEBERMANN, C., and A. Bollert. Anthramine (abst.), - - - - - 4, 207 : 5, 25

LIEBERMANN, C., and O. HÖRMANN. Coloring-matters and glucoside sugar of Persian berries (abst.), - - - - - 2, 62

LIEBERMANN, C., and S. von Kostanecki. On *p*-azocresol (abst.), 6, 161

LIEBERMANN, C., and M. VÖLTKOW. Phenyl mustard oil glycolide (abst.), - - - - - 2, 226

LIEBERMANN, L. Action of bone black on salts (abst.), 1, 95 : Solubility of sulphur in acetic acid (abst.), 1, 99 : Spectrum of fuchsine (abst.), 1, 578 : Determination of sulphurous acid in wines (abst.), 4, 192 : Products of dry distillation of tartaric acid (abst.), 4, 263 : Apparatus for determination of melting-point of alloys (abst.), 4, 263 : Sulphurous acid in wine (abst.), 4, 263 : Detection of sulphurous acid in wine (abst.), - - - - - 4, 263

LIEBMANN, A. Synthesis of cumene (abst.), 2, 95 : Synthesis of homologues of phenol (abst.), - - - - - 4, 205

LIEBSCHÜTZ, M. Examination of butter, 7, 134 : Determination of metallic zinc in zinc dust, - - - - - 7, 136

LIECHTI, L., and W. Suida. Properties of certain salts of iron and aluminum with reference to their use in dyeing (abst.), 6, 172 : On aniline black (abst.), - - - - - 7, 63

LIEPMANN, H. See Fittig, R.

LIGHTFOOT, T. M. Study of the chemical behavior of arsenopyrite, 16, 624

LINDEMANN, O. Volumetric determination of vanadic acid (abst.), 1, 97 : Estimation of free oxygen by means of phosphorus (abst.), 1, 372

LINDET, L. Combinations of auric chloride with sulphur and selenium tetrachlorides (abst.), 8, 20 : New solvents of anhydrous auric chloride (abst.), 8, 34 : Ethereal chloraurophosphites (abst.), - - 8, 276

LINDO, D. Gravimetric determination of chlorine (abst.), 4, 161 : Estimation of phosphoric acid as magnesium pyrophosphate (abst.), 5, 243 : Estimation of phosphoric acid in fertilizers (abst.), 6, 241

LINDSAY, W. B. See Storer, F. H.

LINDSEY, J. B. Value of leather refuse, - - - - - 18, 565

LINEBARGER, C. E. Disulphotetraphenylenne, 13, 270 : Experiments in the anthracene series, 17, 354 : Reaction between zinc sulphate and potassium hydroxide, 17, 358 : Vapor-tensions of mixtures of volatile liquids, 17, 615, 690 : Formation of layers in mixtures of acetic acid and benzene, 17, 932 ; Determining the molecular masses of liquids by means of their surface-tensions, 18, 514 : Surface-tensions of aqueous solutions of oxalic, tartaric, and citric acids, 20, 128 : Speed of coagulation of colloid solutions, 20, 375 : See also Delafontaine, M.

LINK, W. See Römer, H.

LINTNER, C. Nitrogenous constituents of barley and malt (abst.), - - 6, 173

LINTON, LAURA A. Technical analysis of asphaltum, - - 16, 809 ; 18, 275

LIPPmann, E., and F. Fleissner. On azylines (abst.), - - - - - 5, 52

LIPPmann, E., and J. Hawliczek. Eikosylene (abst.), - - - - - 1, 164

LIPPmann, E., and W. Strecker. On amyloideneaniline (abst.), 1, 164 : Nitrocuminal and its derivatives (abst.), - - - - - 1, 164

LIPPmann, E., and G. Vortmann. Compounds of nickelous and cobaltous chlorides with tar bases (abst.), - - - - - 1, 165

LIPPMAN, E. O. VON. Reducing substance occurring in raw beet sugar (abst.), - - - - - 10, 38

LIVACHE, A. Oxidation of oils (abst.), - - - - - 8, 106

LIVERMORE, W. R. The perissad law, - - - - - 12, 426

LIVERSIDGE, A. Specific gravities of some gem stones, - - - - - 16, 205

LIVON, C. See Caillol de Poncy, O.

LLOYD, F. J. Determination of reverted phosphoric acid (abst.), 4, 164 : Estimation of reverted phosphates (abst.), 4, 224 : Super-phosphates and superphosphates (abst.), - - - - - 6, 244

LOCHERT, H. Combination of glycol with aldehydes (abst.), 9, 172 : 10, 18

LOCKYER, J. N. Discussion of working hypothesis that the elements are compound (abst.), 1, 113 : Note on the spectrum of sodium (abst.), - - - - - 1, 373

LODTER, W. See Bamberger, E.

LOEB, M. Molecular weight of iodine in its solutions (abst.), 10, 155 : Use of aniline as an absorbent of cyanogen in gas analysis (abst.), 10, 156 : Use of the Gooch crucible as a silver voltameter, 12, 300 : Apparatus for delineation of curved surfaces, - - - - - 13, 263

LÖSCH, A. Determination of alkaloids in plants (abst.), - - - - - 1, 548

LÖSEKANN, G. Behavior of alkaline solutions of aluminum hydroxide towards hydrogen sulphide (abst.), - - - - - 1, 163, 334

LOEW, O. Source of hippuric acid in urine of herbivorous animals, (abst.), 1, 493 ; 2, 138 : Synthetic preparation of formic acid (abst.), 2, 368 : Preparation of a very active platinum black (abst.), 12, 154 : The alterations of preserved milk (abst.), 5, 28 : Formation of nitrous acid and ammonia from free nitrogen (abst.), 12, 350 : Decomposition of ammonium nitrite by means of platinum sponge (abst.), - - - - - 12, 473

LOEW, O., and T. Bokorny. Reducing properties of living protoplasm (abst.), - - - - - 5, 20

LOW, W. Indigo dicarboxylic acid (abst.), - - - - - 8, 51

LOWERNSTEIN, H. See Norton, T. H.

LOHSE, O. Oil gas in the blast lamp (abst.), - - - - - 1, 91

LOIR, A. Double chemical function of monobasic organic acids (abst.), 1, 489

LOMBARD. Chemical and therapeutical study of salol (abst.), - - 9, 197

LONG, J. H. Observations on American menthol, 14, 149 : Chemical notes from the Columbian Exposition, 15, 250, 312 : Observations on American oil of turpentine, 16, 844 : Precipitation of antimony from solutions of potassium antimonyl tartrate, 17, 87 : Professor Mark Powers (obituary), 17, 586 : Lothar von Meyer (obituary), 17, 664 : On the inversion of sugar by salts, 18, 120, 693 : Formation of antimony cinnabar, 18, 342 : Lavoisier memorial (Note), 19, 170 : Speed of reduction of ferric alum by sugar, - - - - - 19, 683

LONGI, A. Estimation of nitric acid in the presence of other acids (abst.), 6, 239 : Volumetric determination of nitric acid (abst.), 7, 61

LONGMORE, J. Cotton-seed oil (abst.), - - - - - 8, 206

LONGUET. Detection of spermatic fluid (abst.), - - - - - 1, 557

LORD, N. W. Neutrality of ammonium citrate solution, - - - 18, 457

LORIN. Action of oxalic anhydride on sugars (abst.), - - - 1, 100

LOSANITCH, S. M. Action of nitric acid upon diphenylguanidine chloride (abst.), 1, 489 : Action of carbon bisulphide on *p*-nitraniline (abst.), 4, 264: Action of nitric acid on tribromaniline (abst.), 4, 265 : Direct replacement of amido-group in aromatic amines by halogens (abst.), - - - - 7, 119

LOUGUININE, W. Heat of formation of isomeric and homologous compounds (abst.), 6, 36 : Heat of combustion of some ketones and of two ethereal carbonates (abst.), 6, 90: Heats of combustion of fatty acids and their derivatives (abst.), 8, 183 : See also Berthelot, M.

LOUISE, E. A new hydrocarbon (abst.), 5, 121 : Action of anhydrous aluminum chloride upon acetone (abst.), 5, 117 : An aromatic diacetone (abst.), 6, 134 : Phenylmesitylenecarbinol and its principal ethers (abst.), - - - - 8, 53

LOVETT, W. J. Examination of gases escaping from chemical works (abst.), - - - - 4, 161

LOVIBOND, J. W. The tintometer (abst.), - - - - 10, 115

LOVITON, [M]. Method for taking the fusion and solidification points of neutral fatty bodies and of their acids (abst.), - - - - 8, 65

LOW, A. H. Technical estimation of lead, 15, 548 : Copper assay by the iodide method, 18, 458 : Device to prevent loss from spattering, 20, 233 : Testing for a yellow azo-color in fats, etc., - - - 20, 889

LOWE, G. See Sienier, A.

LOWE, J. Separation of bismuth from copper (abst.), - - - - 5, 244

LUBAVIN, N. Analysis of a phosphorite from Nijni Novgorod (abst.), 6, 158

LUCIEN, J. Incineration of sugars and of sirups without sulphuric acid (abst.), - - - - 12, 18

LUCOSSIER, G. Spectroscopic detection of blood (abst.), - - - 10, 88

LUDWIG, R. See Classen, A.

LÜDEKING, C. Analysis of the barium group (abst.), 12, 501 : See also Wheeler, H. A.

LUFF, A. P. See Roberts, W. C.

LUNGE, G. Normal percentage of sulphuric acid in wine (abst.), 1, 365 : Action of sulphur dioxide on nitric oxide (abst.), 4, 72 : Study of reactions for production of soda by new methods (abst.), 4, 75 : Behavior of nitrogen tetroxide with sulphuric acid (abst.), 4, 265 : On the existence of nitrous anhydride in form of vapor (abst.), 4, 266 : The titration of sulphurous acid (abst.), 6, 26 : The action of soda, lime, and magnesia on the salts of ammonia and organic amines, etc. (abst.), 6, 27: The gasvolumeter (abst.), 12, 175 : Apparatus for promoting the interaction of liquids and gases, 15, 361 : Education of industrial chemists, 15, 481: Estimation of sulphur in pyrites, - - - - 17, 181, 772 ; 18, 685

LUNGE, G., and J. H. Smith. The oxidation of the sulphur compounds occurring in the manufacture of caustic soda (abst.), - - 6, 28

LUNGWITZ, E. See Schweitzer, H.

LUPTON, N. T. Effects on butter from feeding cotton-seed food, 13, 134 : Effect of decomposing organic matter upon natural phosphates, 14, 353

LUX, F. Detection of fatty oils when mixed with mineral oils (abst.), 7, 226 ; 8, 39

LWOFF, J. Action of chlorine on isobutylene (abst.), 6, 95 : See also Kelbe, W.

LYTE, F. M. See Maxwell-Lyte, F.

MAAS, P. See Smith, E. F.

MABEN, T. Apricot, peach, and walnut oils (abst.), 8, 184 : See Dechan, M.

MABERY, C. F. How chemistry is best taught, 15, 463 : Examination of the atmosphere of a large manufacturing city, 17, 105 : Inaccuracies in the determination of carbon and hydrogen of combustion, 20, 510

MABERY, C. F., and L. Goldsmith. Influence of antiseptics on the digestion of blood fibrin by pepsin in a hydrochloric acid solution, 19, 889

MABERY, C. F., and O. T. Klooz. Composition of American kaolins, 18, 909

MABERY, C. F. See also Robinson, A. E.

MACADAM, W. I. Manures, natural and artificial (abst.), 10, 47

MACADAM, W. J. Composition of butyrellite (abst.), 9, 6

MCARTER, H. G. See Sadtler, S. P.

McCAY, L. W. Reduction of arsenic acid solutions (abst.), 7, 123 : Action of hydrogen sulphide on arsenic acid (abst.), 10, 11

MCCULLOCK, N. Estimation of iodine (abst.), 10, 27

MCELROY, K. P. Detection of salicylic acid in food, 16, 198 : Contraction of aqueous solutions of acetone, 16, 618 : Estimation of iron and alumina in phosphates, 17, 260 : See also Bigelow, W. D.

MCILHINEY, P. C. The iodine figure of rosin, 16, 56 : New method of analyzing fats and resins, 16, 275 : The analysis of varnishes, 16, 344 : Ganter's process for determining the iodine figure of fats, 16, 372 : The quantitative separation of rosin oil from mineral oils, 16, 385 : Method of determining the Koettstorfer figure of dark-colored substances, 16, 408 : Device for weighing oil for analysis, 16, 882 : The Cassel-Hinman gold and bromine process, 18, 451, (61) : Method for determining the resistance of electrolytes, 20, 206

MCINTIRE, C. Solubility of arsenic trioxide in coffee decoctions, P. 1, 2, 56

MACIVOR, R. W. E. Analysis of acid water from Lake Hope (abst.), 9, 168

McKENNA, C. F. Dr. Gideon E. Moore (obituary), 17, 659

McKERLIE, J. Milk ripener and purifier (abst.), 8, 43

MACKINTOSH, J. B. Determination of graphite in minerals (abst.), 7, 123 : Action of hydrofluoric acid on silica and the silicates, 8, 210

MCLEOD, H. Formation of ozone during slow oxidation of phosphorus (abst.), 2, 351 : Evaporation *in vacuo* (abst.), 5, 235 : Decomposition of potassium chlorate by heat in the presence of manganese dioxide (abst.), 10, 187

McMURTRIE, W. Opening address, Section of Technical Chemistry, World's Congress of Chemists, 15, 545 : Dr. Henry A. Mott (obituary), 19, 90 : Theodore A. Havemeyer (obituary), 19, 588: Some records of recent progress in industrial chemistry (review), 19, 894: Some records of the year's progress in applied chemistry (review), - - - - - 20, 967

MC PHERSON, W. See Weber, H. A.

Mc TAGGART, J. R. See Noyes, W. A.

MÄHLY, J. See Friedländer, T.

MAERCKER, M. Reducing effect of different kinds of sugar on alkaline copper solution (abst.), - - - - - 1, 342

MAGATTI, G. Oxidation of substituted phenols (abst.), - - - - - 2, 223

MAGER, W. H. See Dennis, L. M.

MAGULUNE, M. On the identity of dambose and inosite (abst.), - - - - - 9, 111

MAHON, R. W. Volumetric determination of zinc (abst.), 4, 166 : Estimation of phosphorus in steel, - - - - - 19, 792 ; 20, 429

MAILFERT. Researches on ozone (abst.), - - - - - 4, 235, 237

MAISCH, H. See Gattermann, L.

MALLET, J. W. Production of magnesium nitride by smothered combustion of magnesium in air, P. 1, 2, 17 : Nitrogen iodide (abst.), 1, 112 : An unusual case of electrolysis (abst.), 2, 223 : Properties of pure metallic aluminum, 4, 145: Fractional dehydration of ammonium alum, etc., 4, 180 : Experiments upon alum baking powders, etc. (abst.), - - - - - 10, 171

MALOT, C. Direct titration of phosphoric acid with uranium nitrate (abst.), - - - - - 9, 118

MANDEL, J. A. See Bourgouignon, A., and Friedburg, L. H.

MANN, C. Volumetric estimation of zinc (abst.), 1, 329, 535 : Detection of citric acid (abst.), - - - - - 7, 180

MAQUENNE, L. Action of ozone on manganese salts (abst.), 4, 234 : Preparation, properties, and constitution of inosite (abst.), 9, 103: A few derivatives of saccharic acid and of mucic acid (abst.), 10, 17 : See also Deherain, P. P., and Millot, A.

MARCANO, V. New platinum sulphocyanate (abst.), - - - - - 2, 363

MARCKWALE, W. Furfuran derivatives (abst.), 9, 214 : Trithioacetaldehydes (abst.), 9, 217 : Formation of the quinoline ring, a contribution to the benzene theory (abst.), - - - - - 12, 234

MARIGNAC, C. DE. Review of Berthelot's "Mécanique Chimique," 2, 161

MARPMANN, G. Determination of water in milk (abst.), - - - - - 4, 188

MARQUARDT, A. See Einhorn, A.

MARQUARDT, L. Determination of fusel oil in brandy (abst.), 5, 27, 50 : New agent for thickening mineral lubricating oils (abst.), 8, 109

MARTIN, W. J. The cyanide method of extracting gold from its ores. Application to assays, etc., - - - - - 18, 309

MARTINON. Action of hydrogen dioxide on the oxides of chromium (abst.), - - - - - 8, 162

MARX. Arrangement for moving rider-weights (abst.), - - - - - 1, 586

MASON, F. H. German economy in iron manufacture, - - - 15, 284

MASON, W. P. "Water" results and the public, 9, 30 : Drinking water and disease, 9, 44 : Action of nitric acid on sugar, 9, 45 : Standardizing hydrometers, 9, 156 : The United States gallon, 9, 186 : On fatal poisoning by carbon monoxide, 10, 176 : An alchemical chart, 13, 293 : Estimation of nitrates in water, 16, 71 : Estimation of chlorine in water, 16, 71 : The phenolsulphonic acid process for nitrates in water, 16, 72 : Expert testimony, 16, 273 : Boric acid works at Larderel, 16, 538 : Notes on the hardening of mortar, 16, 733 : The quality of water supplies, 16, 772 : Henry Bradford Nason (obituary), 17, 339: Chemical versus bacteriological examination of potable water, 18, 166: New bacteria counter, 20, 507

MASON, W. P., and J. W. Bowman. Loss of gold and silver during scorification assay, 16, 313: Note on the test for strychnine, - - - 16, 824

MASON, W. P., and S. K. Hine. Note on the direct oxidation of organic matter in water, - - - - - 14, 233

MASSON, O. Action of nitrous anhydride on glycerol (abst.), - - - 5, 233

MATHEWS, J. A. Phthalimide, 18, 679: Action of organic acids upon nitriles, 20, 648 : See also Miller, E. H.

MATSUI, N. Raw materials used in Arita porcelain, - - - - - 2, 315

MATTHEWS, F. E. Condensation products of aldehydes with ethyl acetoacetate and substituted acetoacetates (abst.), 5, 101: See also Claisen, L., and Hodgkinson, W. R.

MATTHEWS, J. M. Derivatives of the tetrachlorides of zirconium, thorium, and lead, 20, 815 : Derivatives of the tetrabromides of zirconium and thorium, 20, 839: Preparation of zirconium nitrides 20, 843 : Separation of iron from zirconium, etc., 20, 846 : See also Smith, E. F.

MAUMENÉ, E. J. Composition of slate (abst.), 2, 131 : Synthesis of quinine (abst.), 4, 236 : Upon oenocyanine (abst.), 5, 119 : On the existence of manganese in wines (abst.), 6, 200 : Alkaline hydroxides (abst.), 7, 283 : Combinations of water with salts (abst.), 8, 179 : Water of combination of alums (abst.), 8, 272 : Alcoholicate of potassium hydroxide (abst.), 8, 273 : On Fahlberg's "saccharin" (abst.), 9, 34 : On inactose or neutral sugar (abst.), - - - 10, 16

MAURO, F. Complex organic acids containing boric acid (abst.), - - - 2, 434

MAURY, G. P. See Murray, C. B.

MAXWELL, W. Relative sensibility of plants to acidity in soils, 20, 103 : Methods and solvents for estimating the elements of plant food probably available in soils, 20, 107 : Evaporation and plant transpiration, - - - - - 20, 469

MAXWELL-LYTE, F. Estimation of chlorine, bromine, and iodine in the presence of one another (abst.), 6, 49 : Copper oxychloride as a paint (abst.), 6, 291 : Curious association of hydrocarbons with rock salt in nature (abst.), - - - - - 10, 75

MAYER, A. Specific gravity of oil from artificial butter (abst.), 4, 188 : Method for detecting adulterated butter (abst.), 8, 87 : Con-

cerning the method of determining the melting-point of butter, 15, 661
 MAYER, F. New preparation of ethylsulphonic acid (abst.), - 12, 158
 MAYER, H. On the toxic effects of the lower fatty acids (abst.), - 8, 229
 MEADE, R. K. Determination of lead in lead ores, 19, 374 : New apparatus for sulphur determinations in iron and steel, and a useful form of wash-bottle, 19, 581 : Volumetric method for the determination of copper, - - - - - 20, 610
 MEDICUS, L., and E. Schwab. Determination of starch in sausages (abst.), - - - - - 1, 571
 MEEKER, G. H. Determination of silica in blast-furnace slag, - 19, 370
 MÉHU, C. Determination of urea by sodium hypobromite (abst.), 2, 430 : Solubility of mercuric iodide in fatty compounds and other solvents (abst.), 8, 40: Destruction of foam in urea determinations (abst.), - - - - - 9, 123
 MEINECKE, C. Volumetric estimation of manganese by permanganate (abst.), 7, 91 : Analysis of clay (abst.), - - - - - 9, 35
 MEISSL, E. Analysis of butter fat (abst.), - - - - - 1, 569
 MEISSLER, A. See Goldschmidt, H.
 MELCKEBEKE, E. VAN. Oxalic acid from oxidation of animal substances (abst.), - - - - - 1, 106
 MELDOLA, R. Contributions to chemical history of aromatic derivatives of methane (abst.), 4, 202 : Constitution of some bromine derivatives of naphthalene (abst.), 5, 91 : Researches on secondary and tertiary azo-compounds (abst.), 6, 94 : Test for nitrous acid (abst.), - - - - - 6, 288
 MELDOLA, R., and E. R. Moritz. Kjeldahl method for nitrogen (abst.), - - - - - 10, 45
 MELIKOFF, P. Oxacrylic acid (abst.), 2, 226 : See also Werigo, B.
 MELLON, W. W. Free acid in superphosphates (abst.), - - - - - 9, 224
 MENKE, A. E., and W. B. Bentley. New derivatives of vanillin, - 20, 316
 MENKE, A. E. See also Wright, C. R. A.
 MENSCHUTKIN, N. Influence of isomerism of alcohols and acids in formation of compound ethers (abst.), 1, 256, 2, 182 : Etherification of unsaturated monobasic acids (abst.), 2, 172 : Structural formulae of sorbic and hydroscopic acids (abst.), 2, 173 : Etherification of hydroxy acids (abst.), - - - - - 4, 205
 MERCKLING, [M]. Value of Baudouin's reagent to detect sesame oil (abst.), - - - - - 9, 177
 MERGET, A. Reagent for mercury vapor (abst.), - - - - - 1, 336
 MERING, J. VON. See Musculus, F.
 MERLING, G. Tropine (abst.), - - - - - 4, 226
 MERMET, A. See Delachanal, B.
 MERRILL, R. S. Explosions and method of testing petroleum oil, P. 1, 115
 MERTINS, P. S. See Howe, J. L.
 MERZ, V., and J. Tibiriçá. Synthetic preparation of formic acid (abst.), - - - - - 2, 94
 MERZ, V., and W. Weith. Synthesis of oxalic acid (abst.), - - - - - 5, 50

MERZ, V. See Gasiorowski, K.. and Gousiorowski, K.

MESSINGER, J. Acetone in methyl alcohol (abst.), 10, 195 : Determination of carbon in organic compounds (abst.), - - - - - 12, 477

MESSINGER, J., and G. Vortmann. Volumetric determination of phenols (abst.), - - - - - 12, 477

METZGER, S. β -Dibromquinoline (abst.), - - - - - 6, 236

MEULEN, H. G. L. VAN DER. See Mulder, E.

MEUNIER, S. Artificial production of spinel (abst.), - - - - - 9, 168

MEYER, E. von. Note on cyanethine (abst.), 1, 497 : Isatoic acid (abst.), - - - - - 7, 174

MEYER, F. Acids produced from xylenes and phthalic anhydride (abst.), 5, 17 : See also Gresly, J.

MEYER, F. L. See Smith, E. F.

MEYER, G. See Ladenburg, A.

MEYER, H. Lactates (abst.), - - - - - 8, 275

MEYER, L. Improved method of purifying mercury (abst.), 1, 378 : History of the periodic law (abst.), - - - - - 2, 225

MEYER, P. J. Mustard oil glycolide (abst.), - - - - - 4, 267

MEYER, R. Tetrabrombenzene (abst.), 4, 175: Microscopic examination of printed cotton goods (abst.), - - - - - 5, 125

MEYER, R., and E. Müller. Constitution of cuminic acid (abst.), 4, 266 : Synthesis of β -propylbenzoic acid (abst.), 5, 20 : Synthesis of cuminic acid (abst.), - - - - - 5, 51

MEYER, V. Note on the density of chlorine, 1, 381 : Answer to Seelheim's remarks on my experiments on chlorine, 1, 481 : Observations on vapor densities (abst.), 2, 371: Calorimetric determination of temperature (abst.), 2, 371 : Lecture experiments (abst.), 4, 227 : On hydroxylamine chloride (abst.), 5, 62 : On isonitroso compounds (abst.), 5, 65 : Synthesis of thiophen (abst.), 7, 206 : α -Cyanophenol (abst.), 10, 38 : The chemical problems of to-day, 11, 101

MEYER, V., and K. Auwers. Formation of anhydrides in the succinic acid series (abst.), - - - - - 12, 157

MEYER, V., and A. Müller. Constitution of nitrosomalonic acid (abst.), - - - - - 5, 131

MEYER, V., and H. Züblin. Contributions to knowledge of chlorine (abst.), 2, 371 : Platinum bromide (abst.), 2, 371: Density of bromine vapor at a yellow heat (abst.), 2, 371 : Experiments on vapor densities of alkali metals (abst.), 2, 371 : Behavior of iodine at high temperatures (abst.), 2, 371 : See also Auwers, K., Demuth, R., Goldschmidt, H., and Wittenberg, M.

MEYERINGH, W. Volumetric estimation of hydroxylamine (abst.), 1, 346

MICHAEL, A. Synthesis of phenol glucoside and orthoformyl glucoside or helicin (abst.), 1, 403: Synthesis of helicin and phenylglucoside (abst.), 2, 42 : New formation of stilbene, and some of its derivatives (abst.), 2, 42 : Monoethylphthalate, etc. (abst.), 2, 220 : Preparation of formaldehyde (abst.), 2, 221 : New formation of ethyl mustard oil (abst.), - - - - - 2, 221

MICHAEL, A., and L. M. Norton. Action of iodine monochloride on aromatic amines (abst.), 1, 484

MICHAELIS, A., and P. Becker. Monophenylboron chloride, and the pentavalence of boron (abst.), 2, 96: Tolylmethyl-ketone (abst.), 4, 206

MICHAELIS, A., and L. Gleichmann. Di- and triphenylphosphine (abst.), 5, 22

MICHAELIS, A., and A. Reese. On aromatic antimony compounds and a method of forming aromatic arsenic compounds (abst.), 5, 63

MICHEL, L. A few crystallized selenates (abst.), 10, 76

MIERS, H. A. Crystallography of bromostrychnine (abst.), 7, 117

MILLER, A. K. Dihydroxybenzoic acids and iodosalicylic acids (abst.), 5, 29, 59

MILLER, E. H. Succinimide, 16, 463: Ferrocyanides of zinc and manganese, 18, 1100

MILLER, E. H., and J. A. Mathews. Table of factors, 18, 903: Ferrocyanides of zinc and manganese, 19, 547

MILLER, F. W. See Baskerville, C., and Venable, F. P.

MILLER, H. K. Electrical disturbance in weighing, 20, 428

MILLER, H. VON. Note on malonic acid (abst.), 1, 494

MILLER, J. A. The analysis of malt, 16, 353

MILLER, W. VON. Rouge français (abst.), 2, 226

MILLER, W. VON., and G. Rohde. Aldehydes of the hydrocinnamic series (abst.), 12, 231: Contributions to knowledge of Étard's reaction (abst.), 12, 231

MILLIAU, E. Methods of testing fats and oils, 15, 153

MILLOT, A. Reversion of phosphates in superphosphates used as fertilizers (abst.), 2, 131: Properties of bicalcic phosphate (abst.), 2, 133: Synthesis of ulmic bodies (abst.), 2, 365: Determination of zinc in zinc ores (abst.), 4, 166: Electrolysis of carbon in ammonia (abst.), 8, 178

MILLOT, A., and L. Maquenne. Volumetric determination of arsenic (abst.), 1, 333: Fermentations of beet-root juice during diffusion (abst.), 2, 91

MILLS, E. J. Action of potash on resin (abst.), 8, 206

MILLS, E. J., and T. Akitt. Estimation of oils and fats (abst.), 6, 245

MILLS, E. J., and J. Buchanan. Photochemical estimation of graded tint (abst.), 10, 86

MILLS, E. J., and G. Donald. Action of oxides on salts: potassium chlorate and ferric oxide (abst.), 4, 142

MILLS, E. J., and J. Pettigrew. The steeping of barley (abst.), 4, 143

MILLS, E. J., and A. G. Rennie. Effect of temperature in dyeing (abst.), 6, 199

MILLS, E. J., and J. Takamine. Absorption of weak reagents by cotton, silk, and wool (abst.), 5, 98

MIQUEL, P. Succinic fermentation (abst.), 1, 273: A new ferment of urea (abst.), 1, 387: Bacillus ferment of urea (abst.), 1, 488: Sulphydric fermentation (abst.), 1, 489: Antiseptics and bacteria (abst.), 6, 79

MITCHELL, C. A. See Hehner, O.

MITCHELL, H. W. Note on litmus, - - - - - P. 1, 79

MITCHELL, W. L. See Wells, H. L.

MIXER, C. T., and H. W. DuBois. The Zimmermann-Reinhardt method for the determination of iron in iron ores, 17, 405 : Särnstrom's method of determining manganese in iron ores, 18, 385 : Notes on determination of insoluble phosphorus in iron ores, - 19, 614

MIXTER, W. G. Compounds of aromatic amines with silver salts (abst.), - - - - - 1, 483

MÖHLAU, R. Orthodiamidodiphenetol (abst.), 1, 495 : On methylene blue (abst.), - - - - - 6, 86

MOHR, C. Volumetric determination of phosphoric acid (abst.), 4, 164 : Remarks on azotometry (abst.), - - - - - 6, 96

MOHR, F. Nature of cohesion and its chemical signification (abst.), 2, 57

MOISSAN, H. Amalgams of chromium, etc. (abst.), 1, 276 : Iron reduced by hydrogen (abst.), - - - - - 1, 401

MOITESSIER, A. See Engel, R.

MONNET, P. Reduction of cupric salts by sugars (abst.), - - - - - 10, 189

MONNET, P., F. Reverdin, and E. Nöltting. Methylaniline, methyltoluidine, and derived coloring-matters (abst.), 1, 273 : Presence of metanitrotoluene in commercial nitrotoluene (abst.), 1, 486 : Dimethylnaphthylamine and naphthoquinone (abst.), - - - - - 2, 91

MONNETY COS, P. Production of a gray color on fiber by simultaneous oxidation of aromatic mon- and diamines (abst.), - - - - - 8, 231

MONNIER, D. On Skrivanoff's battery (abst.), - - - - - 6, 126

MONOT. Manufacture of crystal glass (abst.), - - - - - 1, 172

MOORE, C. C. Determination of potash without the previous removal of iron, calcium, etc., - - - - - 20, 340

MOORE, G. E. Progress of analytical chemistry, - - - - - 1, 83, 320, 527

MOORE, R. W. On Koettstorfer's method of butter analysis (abst.), 6, 311 : Relation of cocoanut oil to methods of butter analysis, 7, 188 : Comparative results in the analysis of fats, 11, 144 : Analysis of marine oils, - - - - - 11, 155

MOORE, T. Separation of zinc and nickel (abst.), - - - - - 6, 288

MORAH, H. See Krüss, G.

MORAWSKI, T. Delicate reaction for fir resin (abst.), - - - - - 10, 195

MORAWSKI, T., and H. Demski. Examination of oils containing unsaponifiable fats (abst.), - - - - - 8, 39

MORAWSKI, T. See also Stingl, J.

MOREHEAD, J. T., and G. de Chalmot. Manufacture of calcium carbide, - - - - - 18, 311

MOREL, J. See Hugounenq, L.

MORGAN, T. M. On a new process for the extraction of indigotine from commercial indigo, - - - - - 12, 302

MORIN, H. Essential oil of *Licari kanali* (abst.), - - - - - 4, 233

MORITZ, E. R. See Meldola, R.

MORLEY, E. W. Moisture retained by gases dried by means of sul-

phuric acid (abst.), 7, 295 : Moisture remaining in gases dried by means of phosphorus pentoxide (abst.), 10, 67: Volumetric composition of water, 12, 275: Carbon, an impurity in hydrogen affecting determination of atomic weights, 12, 276 : Jean Servais Stas, 14, 173

MORLEY, H. F. Methylated diethylenamines (abst.), 2, 223 : Oxy-propyltoluidine (abst.), 4, 206 ; 5, 29, 58 : Ethyl thiocarbonate (abst.), 5, 236

MORLEY, H. F., and A. G. Green. On propylenechlorhydrin (abst.), 7, 118

MORRELL, T. T. Estimation of small quantities of potash with platino-chloride, 2, 145 : Estimation of copper as oxide, 2, 146: Composition of gases in cavities of a Bessemer ingot, 2, 146 : Determination of alcohol with cobalt sulphocyanide, - - - - 2, 340

MORRIS, G. H. α -Methylhydroxysuccinic acid, etc. (abst.), 2, 342 : Constituents of resin spirit (abst.), - - - - 4, 200

MORSE, F. W. Oven for drying in hydrogen, - - - - 15, 709

MORSE, H. N., and W. S. Bayley. On haydenite (abst.), - - - - 6, 158

MORSE, H. N. See also Remsen, I.

MORTON, H. Elimination of antimony from the human system, P. 2, 142 : Chronology of isomeric purpurines, 1, 184 : Effect of change of density in alum purpurine solutions on the absorption bands, 2, 362

MORTON, H., and W. E. Geyer. New sulpho acid of phenanthrene, 2, 203

MORY, A. V. H. See Noyes, W. A.

MOTT, H. A. Manufacture of artificial butter, P. 1, 154 : Application of polarized light to the examination of the alkaloids of the quinine group, P. 2, 57 : Absorption of sugar by bone black, 1, 509 : Valuation of the sugars of commerce, 1, 514 : Effects of alumina salts on gastric juice in digestion, 2, 13 : An examination of the meat of poultry fattened by the French process, - - - - 12, 44

MOYER, J. B. Metal separations by means of hydrochloric acid gas, 18, 1029 : See also Smith, E. F.

MUCK, F. Apparatus for evaporating ammoniacal solutions at a low temperature (abst.), - - - - 9, 220

MÜHLHÄUSER, O. On carborundum, - - - - 15, 411

MÜLLER, A. Heat of combustion of certain amines (abst.), 7, 289 : Preparation of a lubricant (abst.), 8, 109: See also Meyer, V., and Zimmermann, V.

MÜLLER, C. L., and G. Kircher. Action of lead and manganese dioxide on haloid salts of metals in presence of acetic acid (abst.), 5, 23

MÜLLER, C. L. See also Erlenmeyer, E.

MÜLLER, E. See Meyer, R.

MÜLLER, F. C. G. Gases enclosed in iron and steel (abst.), 1, 165 : Researches on the Bessemer process (abst.), - - - - 1, 165

MÜLLER, M. On the purple colors derived from gold (abst.), - - 7, 76

MÜLLNER, F. See Donath, E.

MÜNTZ, A. Galactin (abst.), 4, 231 : Oxidation of iodine in the process of nitrification (abst.), 7, 287 : Existence of the constituents of milk-sugar in plants (abst.), 8, 62 : On the formation of deposits of sodium nitrate (abst.), - - - - 8, 70

MUIR, M. M. P. Influence of temperature upon the decomposition of barium chloride by potassium oxalate in aqueous solution (abst.), 2, 346 : Action of water on bismuth iodide; a lecture experiment (abst.), 4, 142 : Volumetric determination of bismuth (abst.), 4, 167 : Detection of tin in presence of antimony (abst.), - - - 4, 168

MUIR, M. M. P., and C. E. Robbs. Volumetric estimation of bismuth as oxalate (abst.), - - - - - 4, 141

MUIR, M. M. P., and C. Slater. Influence of dilution on chemical changes (abst.), - - - - - 2, 345

MULDER, E. Normal cyanic acid and its derivatives (abst.), - - - 4, 176

MULDER, E., and H. G. L. van der Meulen. Thermochemistry of ozone (abst.), - - - - - 4, 266

MULLER, A. See Ortlieb, J.

MULLER, J. A. Influence of pressure and temperature in the action of potassium chloride on crude methylamine carbonate (abst.), 9, 103

MUNROE, C. E. Apparatus for obtaining distilled water from the service steam, P. 1, 211: Estimation of manganese as pyrophosphate, P. 1, 215 : Flashing test for gunpowder, 6, 7 : Spontaneous decomposition of explosive gelatine, 6, 13 : Determinations of the firing points of various explosives, 12, 57 : Peculiar perforation of zinc rods, 13, 286 : Composition of certain modern powders, 15, 1 : Determination of relative sensitiveness of explosive substances, 15, 10 : Preliminary report of the committee on the tariff, 16, 102 : Inspection of cotton for use in manufacture of guncotton, 17, 783 : Development of smokeless powder (review), 18, 819, (66) : Early specimen of guncotton, - - - - - 19, (12)

MUNSCHEID. Blowing machine (abst.), - - - - - 1, 91

MUNSELL, C. E. An analysis of slag from ignited garbage, 6, 188 : Analysis of *sam-shu*, a Chinese liquor, 7, 243 : The lactometer, its utility and reliability, 10, 122 : Some analyses of carbon minerals, 13, 143

MURRAY, C. B., and G. P. Maury. Rapid method for determination of silicon in silico-spiegel and ferro-silicon, - - - - - 19, 138

MURRILL, P. An efficient gas-pressure regulator, - - - - - 20, 501

MUSCULUS, F., and C. Amthor. Composition of wines of bad years (abst.), - - - - - 4, 192

MUSCULUS, F., and D. Gruber. Action of diastase or dilute sulphuric acid on starch (abst.), - - - - - 1, 101

MUSCULUS, F., and J. von Mering. Action of diastase, etc., on starch and glycogen (abst.), - - - - - 1, 173, 273

MUTER, J., and L. De Koningh. Method for analysis of fats and oils (abst.), - - - - - 10, 194

MYLIUS, E. Volumetric determination of zinc in potable water (abst.), 1, 564

NÄGELI, E. On hydroxylamine reactions (abst.), - - - - - 5, 126

NAKAMURA, T. Cause of diminishing flame in lamps fed with inferior kerosene (abst.), - - - - - 6, 29

NATANSON, S. Fittica's fourth nitrophenol (abst.), - - - - - 2, 371

NAUDIN, L. On anthemene. Researches on Roman camomile(abst.), 6, 191

NAUMANN, A. Stereochemical considerations (abst.), - - - 12, 155
 NEMIROWSKY, J. Action of phosgene upon glycolchlorhydrin (abst.), - - - - - 7, 144
 NENCKI, M. Fungoid growth in absence of oxygen (abst.), 1, 494 : Empirical formula of skatole (abst.), - - - - - 2, 137
 NENCKI, M., and P. Giacosa. Presence of bacteria in organs of healthy animals (abst.), - - - - - 2, 289
 NENCKI, M., and F. Schaffer. Chemical composition of bacteria (abst.), - - - - - 2, 136
 NESSLER, J. Detection of free tartaric acid, and on sulphuric acid, in wine [(abst.), 1, 364 : Reply to Lunge, on sulphuric acid in wine (abst.), 1, 365 : Valuation of wines (abst.), - - - - - 6, 138
 NESSLER, J., and M. Barth. Method for analysis of wine (abst.), 4, 189
 NEUBAUER, H. Determination of phosphoric acid as magnesium pyrophosphate, - - - - - 16, 289
 NEUMANN, S. Estimation of quinine in quinine tannate (abst.), 12, 120
 NEUMEISTER, R. Bromdichloracetic acid and chlordibromacetic acid (abst.), 4, 269 : See also Jacobsen, O.
 NEVILLE, R. H. C., and A. Winther. Orcinol and some other dihydroxytoluenes (abst.), - - - - - 5, 61
 NEWMAN, H. E. See Norton, T. H.
 NIBELUS, A. W. Design for water-bath, - - - - - 15, 374
 NICHOLSON, H. H., and S. Avery. Electrolytic determination of iron, nickel, and zinc, - - - - - 18, 654
 NICOL, W. W. J. Action of heat on thioformanilide (abst.), 4, 206 : Volume alteration attending the mixture of salt solutions (abst.), 5, 97 : Molecular volume of salt solutions (abst.), 6, 48 : The connection between pseudo solution and true solution (abst.), - - - - - 6, 286
 NIEDERIST, G. Action of water on haloid compounds of alcohol radicals (abst.), - - - - - 2, 65
 NIEHLS, W. Improved mercury thermometer for high temperatures, 16, 396 : Scale of hardness for glass, - - - - - 16, 406
 NIEMÖLLER, F. Physical properties of chemical compounds (abst.), 6, 43
 NIETZKI, R. Some derivatives of quinol (abst.), 1, 161 : Naphthyl-sulphuric acid (abst.), 4, 227 : Dye-stuffs, resulting from the simultaneous oxidation of *p*-diamines with monamines (abst.), 6, 289 : *p*-Amidoacetanilide and a few new azo-compounds (abst.), - - - - - 7, 55
 NIETZKI, R., and T. Benckiser. *o*-Nitranilinesulphonic acid and a new method of preparing *o*-nitraniline (abst.), - - - - - 7, 227
 NIETZKI, R., and O. Goll. On azonaphthalene (abst.), - - - - - 7, 228
 NILSON, L. F. Bunsen's older method of separating antimony from arsenic (abst.), 1, 332 : Atomic weight of thorium (abst.), - - 5, 118
 NITSCHER, F. Detection of hydrocarbons in fat and oil (abst.), 8, 86
 NOACK, E. Preparation of carbon monoxide (abst.), 5, 64 : Fluidity of anhydrous and diluted acetic acid (abst.), - - - - - 8, 229

NOBLE, SIR A., and Sir F. A. Abel. Combustion of gunpowder (abst.) - - - - - 1, 399

NÖLTING, E. An isocyanide in the lighter portions of commercial benzene (abst.), 7, 29 : Notes on *o*-nitrobenzyl chloride, on the high boiling phenols of coal tar, on the constitution of phthalyl chloride (abst.), - - - - - 7, 56

NÖLTING, E., and A. Collin. Formation of a blue from rosaniline (abst.), 6, 287 : Pyridine carboxylic acids (abst.), 6, 287 : On the constitution of stypnic acid (abst.), 6, 287 : Nitrating under various conditions (abst.), 6, 309 : Nitro-*o*-toluidine and a few of its derivatives (abst.), - - - - - 6, 310

NÖLTING, E., and O. Kohn. Azo- and disazo-compounds of the cresols (abst.), 7, 54 : Nitroso-*o*-cresol (abst.), - - - - - 7, 55

NÖLTING, E., and O. N. Witt. On *o*-amidoazo-compounds (abst.), 6, 82

NÖLTING, E. See also Monnet, P., and Reverdin, F.

NÖRDLINGER, H. Bicuhya fat (abst.), 8, 42 : Oxidation of pure myristic acid with nitric acid (abst.), 8, 205 : Free fatty acids in oils (abst.), - - - - - 11, 55

NORRIS, R. S. See Benedict, F. G.

NORTON, C. H. See Tscherniac, J.

NORTON, L. M. See Michael, A.

NORTON, T. H. The contributions of chemistry to the methods of preventing and extinguishing conflagration, 17, 137, 251, 361 : New forms of gas generators, 18, 1057 : Some peculiar forms of iron, 19, 108 : Tungsten-iron alloy, 19, 110 : Use of aluminum for condensers, 19, 153 : Derivatives of benzenesulphonic acid, 19, 835

NORTON, T. H., and H. Loewenstein. Salts of dinitro- α -naphthol with various metallic bases, - - - - - 19, 923

NORTON, T. H., and H. E. Newman. Soluble compound of hydрастine with monocalcium phosphate, - - - - - 19, 838

NORTON, T. H., and D. M. Roth. Volatility of certain inorganic salts, 19, 155 : On the existence of orthosilicic acid, - - - - - 19, 832

NORTON, T. H., and I. J. Smith. On certain amine derivatives of dinitro- α -naphthol and its chlorination, - - - - - 19, 927

NORTON, T. H., and J. Tscherniac. Halogen derivatives of ethyl acetamide, P. 2, 115 : Glycollide, P. 2, 118 : Ethoxy-acetonitrile, P. 2, 124

NOURRISSON, C. Anisoilphthaloylic acid (abst.), - - - - - 8, 182

NOYES, A. A. The reliability of dissociation-values determined by electrical conductivity measurements, - - - - - 20, 517

NOYES, A. A., and E. S. Chapin. Solubility of acids in solution of the salts of other acids, - - - - - 20, 751

NOYES, A. A., and J. T. Dorrance. Electrolytic reduction of para-nitro compounds in sulphuric acid solution, - - - - - 17, 855

NOYES, A. A., and D. Schwartz. Solubility of salts of weak acids in stronger acids, - - - - - 20, 742

NOYES, A. A., and R. S. Wason. Velocity of reaction between ferrous chloride, potassium chlorate, and hydrochloric acid, - - 19, 199

NOYES, A. A., and W. H. Watkins. Occurrence of trimethylene glycol as a by-product in glycerol manufacture, - - - - 17, 890

NOYES, A. A., and W. R. Whitney. Rate of solution of solid substances in their own solutions, - - - - 19, 930

NOYES, A. A., and E. H. Woodworth. The theory of solubility effect in the case of tri-ionic salts, - - - - 20, 194

NOYES, W. A. Quantitative work for beginners in chemistry, 16, 59:
 Detection of strychnine in an exhumed human body, 16, 108:
 Post-mortem detection and estimation of strychnine, 16, 720:
 Preparation of diethyl malonic ester, 18, 1105: Toronto meeting of the British Association for the Advancement of Science, 19, 840

NOYES, W. A., and W. M. Blinks. The determination of benzene in illuminating gas, - - - - 16, 697

NOYES, W. A., W. M. Blinks and A. V. H. Morey. Oil gas, - - - 16, 688

NOYES, W. A., C. B. Dudley, and W. F. Hillebrand. Preliminary report of the Committee on Coal Analysis, - - - - 20, 281

NOYES, W. A., and E. D. Frohman. The volumetric determination of phosphorus in steel, - - - - 16, 553

NOYES, W. A., J. R. McTaggart, and H. W. Craver. Determination of heating effects of coals, - - - - 17, 843

NOYES, W. A., and J. S. Royse. Volumetric determination of phosphorus in steel and cast iron. - - - - 17, 129

NOYES, W. A., and J. W. Shepherd. Determination of methane, carbon monoxide, and hydrogen, etc., - - - - 20, 343

NUTH, G. Action of *p*-amidodimethylaniline on aldehyde (abst.), 7, 230

OBERHOLTZER, V. See Smith, E. F.

ODLING, W. See Crookes, W.

OECHSNER DE CONINCK, W. β -Lutidine derivatives of brucine (abst.), 6, 36: Lutidine of coal tar (abst.), 6, 82: Detection and determination of bases of the pyridine and quinoline series (abst.), 7, 292: Nature and properties of alkaloids (abst.), 8, 23

OECHSNER DE CONINCK, W., and J. C. Essner. β -Lutidine derivative of brucine (abst.), 6, 36: On isomerism in the pyridine series (abst.), - - - - 6, 83

OEHLER, H. See Claus, A.

ORTTEL, F. Volumetric determination of fluorine (abst.), 9, 10:
 Analysis of German silver (abst.), - - - - 10, 64

OGIER, J. Heat of formation of hydrogen silicide (abst.), 1, 487:
 Heat of formation of ethyl silicate (abst.), 1, 487: Hydrochloride of phosphine (abst.), 2, 88: Heat of formation of phosphine hydrobromide and hydriodide (abst.), 2, 89: Vapor-density of pyrosulphuryl chloride (abst.), 4, 78: New oxychloride of sulphur (abst.), - - - - 4, 231

OGLIALORO, A. Characteristic reactions of picrotoxin (abst.), - - 1, 339

OHNMAIS, K. See Kriss, G.

OISHI, H. On Japanese camphor oil (abst.), - - - - 6, 313

O'NEAL, E. A. See Howe, J. L.

OPPENHEIM, F. See Pflüger, E.

ORDONNEAU, C. Composition of spirits of wine (abst.), - - - 8, 58

ORLOWSKI, A. Determination of cadmium in presence of copper (abst.), 4, 167 : Determination of cuprous compounds in presence of cupric (abst.), - - - - - 4, 167

ORTLIEB, J., and A. Muller. Solvay process for production of potassium carbonate (abst.), - - - - - 4, 74

OSBORNE, T. B. The proteids of the kidney bean (*Phaseolus vulgaris*), 16, 633, 703, 757 : Proteids of the rye kernel, 17, 429 : The proteids of barley, 17, 539 : Chemical nature of diastase, 17, 587 : Amount and properties of the proteids of the maize kernel, 19, 525

OSBORNE, T. B., and G. F. Campbell. Chemical nature of diastase, 18, 536 : Proteids of malt, 18, 542 : Proteids of the potato, 18, 575 : Legumin and other proteids of the pea and the vetch, 18, 583 : Conglutin and vitellin, 18, 609 : Proteids of lupin seeds, 19, 454 : Effect of minute quantities of acid on the solubility of globulin in salt solutions, 19, 482 : Proteids of the sunflower seed, 19, 487 : Proteids of the cow pea, 19, 494 : Proteid of the white podded adzuki bean, 19, 509 : Proteids of the pea, 20, 348 : Proteids of the lentil, 20, 362 : Proteids of the horse bean, 20, 393 : Proteids of the vetch, 20, 406 ; The proteids of the pea, lentil, horse bean, and vetch, 20, 410 : Proteids of the soy bean, - - - 20, 419

OSBORNE, T. B., and C. L. Voorhees. The proteids of the wheat kernel, 16, 524 : The proteids of cottonseed, - - - - - 16, 778

OSER, J., and W. Kalmann. New indicator for acidimetry (abst.), 4, 166

O'SHEA, L. T. History of the constitution of bleaching powder (abst.), - - - - - 5, 237

OSMOND, F. See Witz, G.

OSSIKOVSKY, J. Cinnamic aldehyde obtained by pancreatic digestion of fibrine (abst.), 2, 368 : Constitution of tyrosine and skatole (abst.), - - - - - 2, 368

OST, H. Pyromeconomic acid (abst.), 1, 294, 490 : Determination of sugars by copper potassium carbonate solution (abst.), - - - 12, 226

OSTERMAIER, H. See Friedländer, P.

OSTERSETZER, O. Apparatus for direct determination of carbon dioxide (abst.), - - - - - 10, 67

OSTWALD, W. Methods of estimating chemical affinity (abst.), 1, 497 : On chemical energy, - - - - - 15, 421

O'SULLIVAN, C. γ - and β -Amylan (abst.), 4, 143 : Estimation of starch (abst.), 6, 44 : Arabic acid, composition, etc. (abst.), 6, 87

OTTO, R. Formation of sulphonic acids from sulphones (abst.), 1, 293 : Preparation of hydrogen sulphide in toxicological investigations (abst.), 1, 293, 378, 393 : Synthesis of the so-called alkylsulphoxides (abst.), 4, 176 : Formation of sulphones from alkyl-sulphonated acids (abst.), 7, 203 : Eukairite from Rioja, Argentine Republic (abst.), 12, 224 : Ethoxyacrylic acid from α -dichlorpropionic acid (abst.), 12, 227 : Behavior of

sodium phenyl mercaptide with isobutylene bromide (abst.), 12, 229

OTTO, R., and H. Beckurts. Pyrocinchonic acid and dichloradipic acid from α -dichlorpropionic acid (abst.), 8, 35, 36

OUDEMANS, A. C., Jr. Contributions to knowledge of quinamine (abst.), 2, 176

OWEN, F. A. Method of determining indigotin for commercial purposes, 10, 178; 13, 32

PAAL, C. Action of acetyl chloride on benzaldehyde in presence of zinc dust (abst.), 5, 133 : Acetonylacetone (abst.), 7, 147

PABST, J. A. Continuous process for preparation of ethyl acetate (abst.), 2, 366

PACKARD, R. L. Aluminum, 15, 221, 276

PADÉ, L. See Dubois, C.

PAGENSTECHER, A. Contributions to knowledge of angelic and tiglic acids, 1, 240

PALM, R. Precipitation and estimation of digitaline, etc. (abst.), 6, 42 : Detection and determination of lactic acid (abst.), 9, 16 : Detection of small quantities of albumin (abst.), 9, 37 : Determination of albumin according to Milton and Commaille (abst.), 9, 47 : Determination of protein compounds in milk (abst.), 9, 48 : Character of peptones and the separation of albumin from the same (abst.), 10, 157

PAMMEL, E. E. See Bennet, A. A.

PANAOTOVITS, W. Synthesis of anthraquinone (abst.), 7, 32 : ρ -Methylisatoic acid and its derivatives (abst.), 7, 144

PAPASOGLI, G. See Bartoli, A.

PAPE, C. See Baeyer, A.

PARKER, C. E. Safety attachment for riders, 16, 764

PARKER, C. L. Our present knowledge of argon, with a partial bibliography, 19, 124

PARKS, N. See Smith, A. W.

PARMENTIER, F. Silico-molybdic acid (abst.), 4, 77 : On a hydrate of molybdic oxide (abst.), 5, 118

PARNELL, E. W. Action of nitrates on alkaline sulphides (abst.), 6, 142

PARR, S. W. Sodium peroxide as a third group reagent, 19, 341 : See also Caldwell, G. C.

PARRY, J. Spectroscopic examination of iron etc. (abst.), 6, 232

PARSONS, C. C. Method of drying sensitive organic substances, 19, 388

PARSONS, C. L. The Le Sueur process for the electrolytic production of sodium hydroxide and chlorine, 20, 868

PARSONS, H. B. Method for proximate analysis of plants (abst.), 2, 220

PASTEUR, L. Virulent diseases; and especially the disease called chicken cholera, 2, 79 : Chicken cholera: study of the conditions of non-recidivation and other characteristics, etc., 2, 214

PASTROVICH, P. On artificially colored claret wines (abst.), 5, 23

PATEIN, G. Researches on sulphines (abst.), 10, 82

PATTINSON, J. Volumetric determination of manganese (abst.), 1, 327 : Determination of arsenic in copper (abst.), 4, 167 : International methods of sampling and testing (abst.), 6, 32 : Rate at which bleaching-powder loses its available chlorine (abst.), 10, 90 : Testing of lard for cotton-seed oil and beef stearin (abst.), - - - - - 10, 182

PAVEC, A. Volumetric determination of phosphoric acid (abst.), 1, 356

PAVY, F. W. Volumetric estimation of sugar (abst.), 1, 109 : Volumetric estimation of glucose (abst.), 1, 341 : The physiology of the carbohydrates in the animal system (abst.), - - - - 6, 159, 233

PAWLEWSKI, B. Velocity of reactions (abst.), 2, 368 : Critical temperatures of liquids (abst.), 4, 264 : Facts about paraffin (abst.), 12, 157

PAWLOW, D. Tetramethylene and its derivatives, and the chemical structure of pinacone (abst.), - - - - 2, 54

PÄYKULL, G. See Bäckström, H.

PAYNE, G. F. Mineral constituents of the watermelon, - - - - 18, 1061

PAYNE, H. L. Correction, - - - - 16, 112

PEACOCK, J. C. See Trimble, H.

PEASE, F. N. See Dudley, C. B.

PECHMANN, H. VON, and W. WELSH. Formation of pyridine derivatives from malic acid (abst.), - - - - 7, 117

PECKHAM, S. F. The asphalt question, - - - - 17, 55

PEIRCE, B. O. Emission spectrum of halogen compounds of mercury (abst.), - - - - 1, 374

PEIRCE, GERTRUDE K. See Smith, E. F.

PELLET, H. Carbonated cupric solution for estimation of glucose (abst.), 1, 344 : Determination of the crystallizable sugar in the beet, - - - - 16, 266

PELLET, H., and J. de Grobert. Colorimetric estimation of salicylic acid (abst.), - - - - 4, 189

PELLET, H. See also Robinet, E.

PELLIZZARI, G. Amidobenzoic acid derivatives of succinic, sebacic, and phthalic acids (abst.), - - - - 7, 202

PEMBERTON, H., JR. Volumetric determination of phosphoric acid, (abst.), 4, 164 : Determination of phosphoric acid by titration of the yellow precipitate with alkali, 15, 382 : Education of industrial chemists, 15, 627 : Determination of phosphoric acid, 16, 278 : Determination of phosphoric acid, - - - - 17, 178

PENFIELD, S. L. Volumetric determination of fluorine (abst.), 1, 113, 539 : Chemical composition of triphyllite (abst.), - - - - 1, 391

PENNEY, M. D. Amount of alumina in flour (abst.), - - - - 1, 110

PENNINGTON, MARY E. Derivatives of columbium and tantalum, 18, 38

PENZOLDT, F., and E. Fischer. Reaction of aldehydes (abst.), - 5, 239

PERGER, H. VON. Constitution of α -diamidoauthraquinone, etc., (abst.), 1, 491 : Determination of morphine in opium (abst.), 7, 33

PERKIN, A. G. Some derivatives of diphenyleneketone oxide (abst.), 5, 100 : See also Hummel, J. J.

PERKIN, W. H. Analysis of organic bodies containing nitrogen (abst.), 2, 352 : Action of acetyl chloride on fumaric acid (abst.), 4, 221 : Rotary polarization under magnetic influence (abst.), 4, 257 : Luminous incomplete combustion of ether, etc. (abst.), 4, 259 : Preparation of diphenyleneketone oxide (abst.), 5, 93, 121 : On some diazo derivatives of nitrobenzyl cyanide (abst.) 5, 596

PERKIN, W. H., Jr. Condensation products of oenanthaldehyde (abst.), 5, 94 : Condensation products of isobutaldehyde (abst.), 5, 94 : Action of ethylene bromide on ethyl malonate (abst.), 6, 83 : Some derivatives of hydrindonaphthene (abst.), 6, 160 : On the existence of the trimethylene ring (abst.) 7, 32

PERKIN, W. H. Jr., and G. Bellenot. *p*-Nitrobenzoylacetic acid (abst.) 7, 31

PERKIN, W. H., Jr. See also Baeyer, A.

PERKINS, F. P. Conduct of ammonia test in potable waters (abst.), 1, 565 : Analysis of butter-fat (abst.), 1, 568 : Determination of nitrates and nitrites in water, as ammonia (abst.) 4, 163

PERRET, E. Determination of tannin in vegetable substances (abst.), 6, 35

PERREY, A. See Hautefeuille, P.

PERRY, N. W. Fusion, casting, etc., of iridium (abst.) 7, 66

PETER, A. M. Changes in official methods of soil and ash analyses, 16, 792

PÉTER, [M.] Action of oils on polarized light (abst.) 9, 176

PETERMANN, A. Remarks on Mohr's article on determination of reverted phosphoric acid (abst.), 7, 179 : Assimilation of atmospheric nitrogen 12, 145

PETERS, K. Linoleic acid (abst.) 8, 230

PETRI, C. Contributions to the knowledge of fumaric and maleic acids (abst.) 1, 236

PETRI, J. Spectroscopic detection of ergot in flour (abst.) 1, 340

PETRI, R. Chemistry of chondrine (abst.) 1, 397

PETRIEFF, M. Double decomposition dependent on atomic weight (abst.), 6, 128 : Purification of bone oil (abst.) 6, 136

PETTERSSON, O. Determination of carbon dioxide (abst.) 12, 354

PETTERSSON, O., and A. Smitt. Determination of free and combined carbon in iron or steel (abst.), 12, 352 : New method for determination of carbon in iron and steel, 15, 213

PETTIGREW, J. See Mills, E. J.

PFAUDLER, L. Determination of vapor-densities (abst.) 1, 170 377

PFLÜGER, E., D. Finkler, and F. Oppenheim. Method for elementary analysis of nitrogenous substances (abst.) 1, 336

PFORDTEN, O. von DER. Reduction of molybdenum compounds (abst.), 5, 51 : Determination of phosphoric acid (abst.), 5, 52 : Absorbent for oxygen (abst.) 7, 177

PHILIPP, J. On tungsten bromides (abst.) 4, 266

PHILIPP, O. See Fischer, B.

PHILLIPS, F. C. A form of silver obtained in the reduction of the sulphide by hydrogen, 16, 700 : Occurrence of hydrogen and methane

in the atmosphere, 17, 801 : Evolution method for determination of sulphur in white cast iron, 17, 891 : Determination of sulphur in cast iron, 18, 1079 : Lubricants for glass stop-cocks, 20, 678 : Occurrence of hydrogen sulphide in the natural gas, etc., - - - 20, 696

PHILLIPS, W. B. Rate of reversion in superphosphates, 6, 224 : Reversion of phosphoric acid by heat, etc., - - - - - 6, 229

PHILLIPS, W. B., and D. Hancock. Commercial analysis of bauxite, 20, 209

PHIPSON, T. L. Coloring-matter of *Palmella cruenta* (abst.), 1, 403 : Chemical phenomena of respiration of plants (abst.), 6, 232 : Determination of phosphoric acid in contaminated waters (abst.), 9, 174

PICARD, P. Determination of glucose in blood (abst.), - - - - - 1, 351

PICKERING, S. U. Molecular weight of basic ferric sulphate (abst.), 5, 100 : Note on a basic ammonium copper sulphate (abst.), 5, 231 : Heat of hydration of salts (abst.), 6, 189 : Modifications of sodium sulphate (abst.), 7, 28 : On the heats of dissolution of the sulphates of potassium and lithium (abst.), 7, 52 : Calorimetric determinations of magnesium sulphate (abst.), - - - - - 7, 52

PICTET, A. On quinoline and lutidine (abst.), - - - - - 4, 272

PIGEON, N. Oil of malt, - - - - - 7, 22

PILLITZ, W. Analysis of the Zsadányer meteorite (abst.), - - - - - 1, 86

PINNER, A. Condensation of acetone (abst.), 4, 268 : Behavior of hydrocyanic acid and of ethylenecyanide to hydrochloric acid and alcohol (abst.), 5, 123 : Action of phenylhydrazine upon the imidoethers (abst.), 6, 235 : Action of hydroxylamine upon the imidoethers and the amidines (abst.), - - - - - 6, 236

PINNOW, J. See Will, W.

PITKIN, L. Compound platinates and a new platinum potassium salt, 1, 472 : The chlorobromplatinates of potassium, 2, 196 : Isomorphous salts and fractional crystallization, 2, 408 : Action of cold concentrated sulphuric acid on lead and its alloys, 5, 219 : Action of concentrated sulphuric acid, at 100°, on lead and its alloys, 5, 224 : Efficiency of porous porcelain filters, 9, 22 : Solubility of alumina residues from baking powders in gastric juice, 9, 27 : Influence of tartrates and lactates on the digestion of albuminoids, 12, 394 : Alum phosphate baking powders, - - - - - 12, 452

PITMAN, J. R. Action of sulphuric acid on mercury, - - - - - 20, 100

PLACEWAY, L. A. See Bennett, A. A.

PLAGEMANN, A. Action of amines on dichloronaphthoquinone (abst.), 4, 265

PLANCHON, V. Determination of glycerol by oxidation (abst.), - - - 10, 197

PLANTA, A. VON, and E. Schulze. A new crystallizable carbohydrate (abst.), - - - - - 12, 352

PLATT, C. Qualitative examination of acetanilide, 18, 142 : Separation of alkaloidal extracts, 18, 1104 : Normal urine, 19, 382 : See also Griffith, A. B.

PLIMPTON, R. T. Some halogen compounds of acetylene (abst.), 5, 29, 58

PLIMPTON, R. T., and E. E. Graves. Estimation of the halogens in volatile organic compounds (abst.), - - - - - 5, 96

PLUGGE, P. C. Decomposition of mercuric cyanide by dilute acids (abst.), 1, 556 : Separation of the alkaloids of opium (abst.), 9, 176 : A reaction of narceine (abst.), - - - - - 9, 177

POLIS, A. Cubic alum and the accommodation of chrome alum (abst.), 2, 370 : Aromatic lead compounds (abst.), - - - - 10, 39

POLLARD, W. See Seubert, K.

POLSTORFF, K. Action of potassium ferricyanide on morphine (abst.), 2, 97 : Action of potassium ferricyanide on methylmorphine iodide (abst.), 2, 98 : Action of benzoyl chloride on morphine (abst.), 2, 98 : See also Brockmann, K.

PONCY, C. DE. See Caillol de Poncy, O.

POND, F. J., and F. T. Beers. Derivatives of eugenol, - - - - 19, 825

PONOMAREFF, J. Ethyl cyanate and cyanurate (abst.), 4, 267 : Constitution of allantoxanic acid (abst.), - - - - - 6, 135

POOL, F. V. New form of dropping flask, - - - - - 7, 20

POOLE, H. Determination of fat and casein in feces, 19, 877 : Determination of undigested fat and casein in infant feces, - - - - 20, 765

POPE, F. J. Volumetric estimation of lead, 18, 737 : Estimation of sulphides in calcium carbide, - - - - - 18, 740

POPPER, A. Decomposition of solutions of hypochlorous acid and of chlorine in sunlight (abst.), - - - - - 7, 120

POPPER, R. Determination of precipitates without filtration, etc. (abst.), - - - - - 1, 84

PORTER, J. H. The Porter-Clark process (abst.), - - - - - 6, 103

POSEN, E. Note on amidohydrocinnamic (phenylamidopropionic) acid (abst.), - - - - - 1, 243

POST, J. Action of sulphuric acid on phosphates, especially calcium phosphate, with respect to manufacture of superphosphates (abst.), 2, 96 : Composition of manganese peroxide produced by the Weldon process (abst.), 2, 96 : Oxidation of manganese hydroxide with respect to the regeneration of manganese dioxide (abst.), - - - - 2, 96

POST, J., and E. Hardtung. Action of sulphuric acid on isomeric nitramido- and diamidobenzenes (abst.), - - - - - 2, 95

POTILITZINE, A. Relation of speed of reaction and atomic weight (abst.), 6, 128 : On the hydrates of cobalt chloride, etc. (abst.), 6, 307

POTTER, W. R. Recent theories of the sulphuric acid process, - - - - 14, 24

POUCHET, A. G. Detection of medicinal and poisonous substances in saliva (abst.), - - - - - 1, 402

POWER, F. B. Analysis of mineral spring at Rosheim in Alsatia (abst.), - - - - - 1, 491

PRAETORIUS-SEIDLER, G. Cyanamide (abst.), - - - - - 1, 496

PRATT, J. W. Soldering and repairing platinum vessels (abst.), - - - - 7, 150

PRECHT, H. Volumetric determination of potassium (abst.), 1, 536 : Volumetric determination of magnesium (abst.), - - - - - 1, 564

PREIS, R., and B. Raymann. Action of iodine on aromatic compounds (abst.), 1, 393 : Contributions to knowledge of cholesterine (abst.), 1, 394 : Some dichromates (abst.), - - - - - 2, 369

PREIS, K. See also Raymann, B.

PRESCOTT, A. B. Aluminates of potassium and sodium in solution, 2, 27; Zinc oxide in alkaline solutions, 2, 29; Silver ammonium oxide in solution, 2, 32; Proportion of nitrogen found in grain and flour of different varieties of wheat, 2, 333; Analyses of vinegar, 2, 335; Test limits in examination of sugar for injurious metals, 2, 337; Estimation of nicotine in tobacco, 2, 338; Estimations of arsenic in wall paper, etc., 2, 339; Examinations of pickles for copper, 2, 340; The chemistry of nitrogen as disclosed in the constitution of the alkaloids, 9, 128; The immediate work in chemical science, 14, 190; Note on the recovery of arsenic, 14, 223; Recent advances in analytical chemistry, 15, 376; Closing address before the World's Congress of chemists, 16, 867; The periodides, 17, 775; Notes on a few pyridine alkyl iodides, 18, 91; Peter Collier (obituary), 18, 748; Alkyl bismuth iodides and bismuth iodides of vegetable bases, - - - - - 20, 96

PRESCOTT, A. B., and S. H. Baer. Pyridine alkyl hydroxides - - - 18, 247

PRESCOTT, A. B., and H. M. GORDIN. Certain alkaloidal periodides and the volumetric estimation of alkaloids, etc. - - - - 20, 706

PRESCOTT, A. B., and P. F. Trowbridge. Periodides of pyridine - - 17, 859

PRESCOTT, A. B. See also Baer, S. H., Flintermann, R. F., Gordin, H. M., and Knox, J. W. T.

PREUSSER, J. Determination of tungsten in tungsten alloys (abst.), 11, 53

PROCHAZKA, G. A. Probable occurrence of norwegium in American lead, 2, 213; Action of phthalic anhydride on gallic acid - - - 4, 296

PROCHAZKA, G. A., and H. Endemann. Notes upon chicle - - - - 1, 50

PROCHAZKA, G. A. See also Endemann, H.

PROCTER, H. R. Weselsky's reaction for phoroglucinol (abst.), 1, 338; Titration of free acid in tan liquors (abst.), 1, 367; Some improvements in the estimation of tannins (abst.), 6, 98; On the qualitative determination of tanning materials - - - - 16, 247

PROKOFIEFF. Analogies between boron and vinyl (abst.), - - - - 6, 158

PRUNIER, L. Hydrocarbons obtained from American petroleum (abst.), - - - - - 1, 384

PRUNIER, L., and R. David. Hydrocarbons from American petroleum (abst.), - - - - - 1, 277

PRUNIER, L., and E. Varenne. Substances contained in coke from petroleum (abst.), - - - - - 2, 435

PUCKNER, W. A. Improved Gooch crucible, 15, 710; Estimation of caffeine - - - - - 18, 978

PUFAHL, O. Arseniomolybdic acid (abst.), - - - - - 6, 286

PURDIE, M. Chemical composition of milk of porpoise (abst.), 7, 290

PURGOTTI, E. Tincture of guaiacum as reagent for copper (abst.), 1, 528

QUANTIN, H. Volumetric determination of sulphates (abst.), - - 12, 72

QUINAN, C. Convenient burette clamp, - - - - - 16, 719

QUINAN, W. R. Physical aspects of argon. The ideal thermometrical substance for high temperatures, - - - - - 17, 477

QUINCKE, G. Imperviousness of glass to gases, - - - - - 1, 91

RADCLIFFE, T. Analysis of rock-salt from Saltville, Virginia, 4, 255 : Analysis of deposit of zinc oxide in a blast-furnace at Longdale, Virginia, - - - - - 4, 256

RADIGUET. See Tommasi, D.

RADZISZEWSKI, B. Some new glyoxalines (abst.), - - - - - 5, 242

RAHT, A. Notes on cupro-manganese, - - - - - 1, 43

RAIMAN, E. The fat contained in cochineal (abst.), - - - - - 8, 66

RAMDOHR, L. Preparation of charcoal for gunpowder (abst.), - - - - - 9, 190

RAMMELSBERG, C. Determination of lithium as phosphate (abst.), 1, 106 : Precipitation of lithium as phosphate (abst.), 1, 335: Ves- bium and norwegium (abst.), 2, 224 : Vanadium salt from soda liquors (abst.), 4, 73 : Gay-Lussite in soda liquors (abst.), 4, 73 : On the sesquicarbonate of potassium (abst.), - - - - - 5, 66

RAMSAY, W., and J. T. Cundall. Oxides of nitrogen (abst.), - - - - - 7, 200

RAMSAY, W., and S. Young. Decomposition of ammonia by heat (abst.), 6, 73 : Method of determining vapor pressures (abst.), - - - - - 7, 53

RAMSAY, W. See also Evans, F. P.

RAOULT, F. M. Composition of the alkaline permanganates (abst.), 8, 272

RASINSKI, F. Fractional distillation in current of steam as a means of investigating naphtha (abst.), - - - - - 7, 33

RAU, A. Teachings of chemical valence, etc. (abst.), - - - - - 2, 291

RAU, H. M. Methods of indigo testing, 7, 16 : On the estimation of tannins, - - - - - 9, 52

RAVE, P., and B. Tollens. Lactone from levulinic acid and formaldehyde, - - - - - 15, 708

RAVE, P. See also Tollens, B.

RAWLING, C. Q. Note on a molding sand, - - - - - 17, 502

RAWLINS, L. Ultramarine (abst.), - - - - - 9, 210

RAWSON, C. Remarks on methods of indigo testing (abst.), - - - - - 7, 211

RAWSON, S. G. Test for tannic acid (abst.), - - - - - 10, 182

RAYMANN, B. On isodulcite (abst.), - - - - - 9, 111

RAYMANN, B., and K. Preis. Action of iodine on aromatic com- pounds with long side chains (abst.), - - - - - 2, 369

RAYMANN, B. See also Preis, K.

RAYNAUD, H. Determination of glycerol in wine (abst.), 2, 364 : See also Suillots, H.

RECOURA, A. See Berthelot, M.

REDWOOD, B. On viscosimetry (abst.), - - - - - 8, 109

REESE, A. See Michaelis, A.

REESE, C. L. Petroleum inclusion in quartz crystals, - - - - - 20, 795

REESE, L. Determination of ash (abst.), - - - - - 10, 68

REFORMATSKY, S. Hydrocarbon, C_8H_{14} , obtained from allyldiethyl- carbinol (abst.), - - - - - 6, 135 ; 7, 60

REGELSBERGER, F. F. Compounds of uranyl chloride with ammonia (abst.), - - - - - 7, 121

REGNARD, P. See Bert, P.

REICHARDT, E. Free carbonic acid in potable water and its effect on leaden pipes (abst.), - - - - - 10, 71

REICHER, L. T. On the velocity of saponification (abst.), - - - - - 8, 83

REICHERT, E. Simplified method of testing butter (abst.), - - - - - 1, 86

REIDEMEISTER. Gay-Lussite in crude soda lyes (abst.), - - - - - 4, 73

REIFSNYDER, S. K. See Shimer, P. W.

REIMANN, M. Chromium black on wool (abst.), - - - - - 1, 290

REINHARDT, C. An alcohol lamp with constant level (abst.), 6, 99 : On the numbering of porcelain crucibles (abst.), 6, 99 : Melting-point of fats (abst.), - - - - - 8, 86

REINHARDT, H., and W. Staedel. Methylating and ethylating of aniline and toluidine (abst.), - - - - - 5, 64

REINHERZ, H. See Birnbaum, K.

REINITER, B. Error in determination of iron in presence of chromium (abst.), - - - - - 4, 166

REINKE, J. Reducing properties of living cells (abst.), - - - - - 4, 176

REISENEMER, H. Compounds of the hydrazines with ketones (abst.), 5, 239

REITMAIR, O. See Stutzer, A.

RÉMONT, A. Determination of total nitrogen in manures containing nitrates (abst.), 1, 279, 356 : Analysis of heavy mineral, fatty, and resin oils, etc. (abst.), 2, 433 : Determination of salicylic acid (abst.), - - - - - 5, 118

REMSEN, I. Oxidation of substitution products of aromatic hydrocarbons (abst.), 1, 115, 283 : Action of alcohol on diazo-compounds (abst.), 7, 148 : Oxidation of sulphamine-*m*-toluic acid (abst.), 2, 369

REMSEN, I., and R. D. Coale. On sinapic acid (abst.), - - - - - 6, 167

REMSEN, I., and C. Fahlberg. Oxidation of substitution products of aromatic hydrocarbons: oxidation of *o*-toluenesulphamide (abst.), 2, 221

REMSEN, I., and M. W. Iles. Oxidation of xylenesulphamides (abst.), - - - - - 1, 116, 283

REMSEN, I., and E. H. Keiser. Behavior of carbon monoxide with air and moist phosphorus (abst.), - - - - - 6, 75

REMSEN, I., and H. N. Morse. Oxidation of brom-*p*-ethyltoluene (abst.), - - - - - 1, 284

RENARD, A. Products of distillation of colophony (abst.), 4, 233 : Propionic acid (abst.), 8, 275 : Determination of indigo on the fibre (abst.), - - - - - 9, 16

RENNIE, A. G. See Mills, E. J.

RENNIE, E. H. Action of ethyl chlorocarbonate on benzene in presence of aluminum chloride (abst.), 4, 143 : Benzylphenol and some of its derivatives (abst.), 4, 143 : Benzylphenol and its derivatives (abst.), - - - - - 4, 204

RETTIE, T. Compounds of metallic hydroxides with iodine, - - - - - 19, 333

REVERDIN, F., and E. Nöltning. The alpha and beta positions in naphthalene (abst.), - - - - - 2, 94, 132

REVERDIN, F. See also Monnet, P.

REYCHLER, A. History of ammonium silver compounds (abst.), - 6, 73
 REYER, E. Solidification (abst.), - - - - - 7, 244
 REYNOLDS, J. E. Apparatus for liquefaction of ammonia (abst.), 4, 220
 RHOUSSOPOULOS, O. Some quinoline derivatives (abst.), 5, 52: Action of quinoline on chloroform and iodoform (abst.), - - - - - 5, 66
 RIBAN, J. Transformation of starch into glucose by cold water (abst.), 1, 271: Camphor of Borneo (abst.), 1, 277: Determination of phosphine (abst.), 1, 372: Combination of phosphine with cuprous chloride, and its determination in gaseous mixtures (abst.), 1, 386: Transformation of tricalcium phosphate into phosphorus oxychloride (abst.), - - - - - 5, 120
 RICCIARDI, L. Analysis of a volcanic ash from Mt. Etna (abst.), 4, 232: Composition of ashes from Vesuvius (abst.), 4, 237: Composition of ripe and unripe bananas (abst.), - - - - - 4, 272
 RICE, C. Answer to O. Hesse (abst.), 1, 162: Apparatus for determining solubilities, - - - - - 16, 715
 RICHARD, A. On the pyridine bases (abst.), - - - - - 2, 89
 RICHARDS, Ellen H. Carbon dioxide as a measure of the efficiency of ventilation, - - - - - 15, 572
 RICHARDS, Ellen H., and J. W. Ellms. The coloring-matter of natural waters, its source, composition, and quantitative measurement, 18, 68
 RICHARDS, J. W. Commercial valuation of lead-tin and lead-antimony alloys, - - - - - 16, 541
 RICHARDSON, C. Determination of reverted phosphoric acid (abst.) 4, 163
 RICHARDSON, G. M. Professor August Kekulé (obituary), 18, 1107: Victor Meyer (obituary), - - - - - 19, 918
 RICHARDSON, H. A. See Gill, A. H.
 RICHE, A. Waters of the Bourboule (abst.), - - - - - 2, 431
 RICHMOND, H. D. The river Nile, 15, 34, 84: Accuracy in analysis of dairy products, 15, 579: See also Hehner, O.
 RICHTER, M. Titration of potassium dichromate (abst.), - - - - - 4, 165
 RICHTER, V. VON. Cinnoline derivatives (abst.), - - - - - 5, 239
 RICHTERS, T. Method of mixing gases in the leaden chamber process (abst.), - - - - - 4, 73
 RICKETTS, P. DE P. Detection of glucose in cane-sugar, and exact determination of cane-sugar by the polariscope, - - - - - 1, 2
 RIDREAL, S. See Green, A. G.
 RIEDEL, C. Constitution of nitrosodimethyl-*m*-toluidine (abst.), 2, 171
 RIETH, R. Formulae for mixing a solution of desired strength (abst.), 6, 43
 RIGAUT, A. See Lescœur, H.
 RIGBY, J. S. Conversion of lime mud into cement (abst.), - - - - - 10, 91
 RIGGS, W., and R. Giebermann. Determination of silicon and phosphorus in iron and steel (abst.), - - - - - 1, 104
 RILLIET, A. See Ador, E.
 RIMMINGTON, F. M. Pepper adulteration and analysis (abst.), - - - - - 10, 70
 RINDELL, A., and F. Hannin. Kjeldahl method for nitrogen determinations (abst.), - - - - - 8, 81

RIS, C. Derivatives of di- β -naphthylamine (abst.) - - - - 9, 193
 RIS, C., and A. Weber. Derivatives of β -dinaphthylamine (abst.) - - - - 6, 237
 RISING, W. B., and V. Lenher. Electrolytic method for the determination of mercury in cinnabar, - - - - 18, 96
 RITTHAUSEN, H. Occurrence of citric acid in seeds of leguminous plants (abst.), 7, 30 : Melitose in cotton-seed, - - - - 7, 30
 RITTHAUSEN, H., and F. Weger. Betain in cotton-seed cake (abst.), 7, 58
 RITZA, B. Camphor from *Ledum palestre* (abst.), - - - - 6, 95
 RJABININ, C., and A. Saytzeff. Diallylisopropylcarbinol (abst.), - - - 2, 177
 ROBBS, C. E. See Muir, M. M. P.
 ROBERT, W. See Brunner, H.
 ROBERTS, W. C., C. R. A. Wright, and A. P. Luff. Chemistry of lesser-known alkaloids (abst.), - - - - 1, 552
 ROBINET, E., and H. Pellet. Antiseptic properties of salicylic acid (abst.), - - - - 4, 238
 ROBINSON, A. E., and C. F. Mabery. Composition of mineral waters in Northwestern Pennsylvania, - - - - 18, 915
 ROBINSON, F. C. Constant level apparatus, - - - - 16, 405
 ROBINSON, H. Atomic weight of cerium (abst.), - - - - 6, 306
 ROBINSON, H. H. See Japp, F. R.
 ROBINSON, N. Sources of error in methods of determining potash in fertilizers, etc., - - - - 16, 364
 ROCQUES, X. Action of water on zinc tanks and lead pipes (abst.), 2, 432
 RODATZ, P. See Stohmann, F.
 RÖDER, F. Synthesis of vinaconic acid (abst.), 7, 81 : See also Fittig, R.
 RÖDIGER, W. Detection of rosin oil or paraffin oil in lard, etc. (abst.), 4, 192
 ROEMER, H. Anthracylamine (abst.), - - - - 4, 230
 ROSMER, H., and W. Link. Nitramido- and oxymethyl-anthraquinone (abst.), 5, 240: Amidomethylanthranol (abst.), - - - - 5, 241
 ROEMER, H. See also Schunck, E.
 ROESLER, L. Method for analysis of wines (abst.), - - - - 4, 189
 RÖSSLER, C. Volumetric determination of manganese (abst.), 1, 329: Lead assay in wet way (abst.), - - - - 7, 62
 RÖSSLER, O. Detection of minute quantities of carbon dioxide and other gases (abst.), - - - - 9, 200
 ROHDE, G. See Miller, W. von.
 ROLFE, G. W., and G. Defren. The hydrolysis of starch by acids, 18, 869 : Notes on an analytical investigation of the hydrolysis of starch by acids (note), 19, 261: Hydrolysis of starch by acids. An apology (note), - - - - 19, 679
 ROLFE, G. W., and W. A. Faxon. Exact estimation of total carbohydrates in acid hydrolyzed starch products, - - - - 19, 698
 ROLL, G., and O. Hölz. Benzyl ethers of brominated nitrophenols, and their behavior on reduction (abst.), - - - - 7, 245
 RÖLLER, A. Determination of sulphur in iron, etc. (abst.), - - - 1, 560
 ROMANIS, R. Molecular volume of some double chlorides (abst.), 6, 232
 ROMIG, C. See Anschütz, R.

ROSCOE, SIR H. E. Study of earth-metals contained in samarskite (abst.), 4, 222 : Atomic weight of carbon by combustion of diamond (abst.), 4, 237

ROSCOE, SIR H. E., and A. Schuster. Spectrum of terbium (abst.), 4, 223

ROSCOE, SIR H. E., and T. E. Thorpe. Absorption spectrum of bromine and iodine monochlorides, 1, 95

ROSELL, C. A. O. The ferrates, 17, 760

ROSENBLADT, T. Determination of boric acid (abst.), 9, 11 : Separation of mercury and palladium from each other, and from lead, copper, and bismuth (abst.), 9, 12

ROSENFELD, M. Lecture experiments (abst.), 4, 205 : See also Hönig, M.

ROSENSTIEHL, A. On article of E. and O. Fischer, on constitution of rosaniline (abst.), 1, 271 : Constitution of salts of rosaniline and analogous coloring-matters (abst.), 2, 366, 431

ROSENSTIEHL, A., and M. Gerber. Homologous and isomeric rosanilines (abst.), 4, 237 : On the probable number of homologous and isomeric rosanilines (abst.), 6, 191

ROSER, W. Terebenthic acid (abst.), 4, 227

ROSS, B. B. Direct estimation of citrate-soluble phosphoric acid, 16, 304 : Recent work on the sugars, 16, 549, 670 : Analytical methods involving the use of hydrogen dioxide, 18, 918

ROSSI, A. J. New process for the manufacture of artificial ice, P. 1, 2, 74 : Cyprien, M. Tessié du Motay (obituary), 2, 305 : Titanium in blast-furnaces, 12, 91 : Eugène Melchior Peligot (obituary), 12, 128 : On blast-furnace slags and the fusibility of silicates, 12, 189, 307 : The calculation of blast-furnace slags, 12, 443

ROSSOLYMO, A. See Gattermann, L.

ROTH, C. F. Apparatus for determining melting-points (abst.), 8, 278 : See also Ladenburg, A.

ROTH, D. M. See Norton, T. H.

ROTTEN, M. Preparation of soluble magnesia soaps (abst.), 8, 64

ROUSSEAU, G. Diatomic alcohol derived from β -naphthol (abst.), 4, 77 : Action of chloroform on β -naphthol (abst.), 4, 241

ROUSSEAU, G., and B. Bruneau. Preparation of barium permanganate (abst.), 6, 77

ROUX, L. Preparation of a propyl- and an amylnaphthalene (abst.), 6, 164 : Action of aluminum chloride upon bromo-, chloro- and iodonaphthol (abst.), 8, 94 : See also Barbier, P.

ROYSE, J. S. See Noyes, W. A.

RUBE, Dr. On the estimation of nitrogen (abst.), 6, 96

RUBNER, M. Formation of fat from carbohydrates in carnivora (abst.), 8, 86

RUDOLPH, C. α -Nitrobenzaldehyde and its behavior towards nascent hydrogen (abst.), 2, 366 : See also Fischer, O.

RUEDIGER, A. P. See Cady, H. P.

RÜDORFF, F. Simple form of volumenometer (abst.), 1, 379 : Determination of specific gravity of powdered bodies (abst.), 1, 395 :

Determination of moisture in the air (abst.), 2, 171 : Constitution of solutions (abst.), - - - - - 12, 351

RÜGHEIMER, L. Artificial piperine (abst.), 5, 28 : See also Ladenburg, A.

RUFACH, C. W. See Weigelt-Rufach, C.

RUFFLE, J. Determination of total nitrogen by combustion (abst.), 1, 542 : Estimation of oxides of nitrogen as ammonia (abst.), 4, 160

RUFI, H. See Bondzynski, S.

RUNYAN, E. G., and H. W. Wiley. Determination of small quantities of phosphoric acid by the citrate method, - - - - - 17, 513

RUPP, W. On β -phenanthrolmonosulphonic acid, - - - - - 6, 155

RUSSELL, W. H., and W. Lapraik. Spectroscopic study of chlorophyll (abst.), - - - - - 4, 257

SAARBACH, L. Phenoxypropionic acid (abst.), 1, 296 : Simple form of gas regulator, - - - - - 18, 511

SABANÉEFF, A. Action of sulphuric acid on oleic acid (abst.), - - - - - 8, 85

SABATIER, P. Numerical laws of the solid state (abst.), - - - - - 6, 73

SABIN, A. H. A new form of air thermometer for technical purposes, 12, 277

SACC, F. Cucurbitaceae of Uruguay (abst.), 4, 236 : Chemical studies of products of Uruguay (abst.), - - - - - 4, 237

SACHSSE, R. Determination and formula of starch (abst.), 1, 546 : New coloring-matter derived from chlorophyll (abst.), - - - - - 6, 133

SADTLER, S. P., and H. G. McCarter. Petrocene (abst.), - - - - - 1, 114

SAEGER, O. See Kühn, B.

ST. MARTIN, L. DE. Intensity of respiration processes in a super-oxygenated atmosphere (abst.), - - - - - 6, 129

SAKURAI, J. Metallic compounds containing bivalent hydrocarbon radicals (abst.), 4, 258 : Note on methylene chloriodide (abst.), 7, 214

SALAMON, A. G. See Hood, J. J.

SALKOWSKY, E. Examination of cod liver oil and vegetable oils (abst.), - - - - - 10, 70

SALKOWSKY, E. and H. Salkowsky. Formation of hydrocinnamic acid by pancreatic digestion (abst.), 1, 166 : Products formed by putrefaction of albumin (abst.), - - - - - 2, 174

SALKOWSKY, H. Behavior of *m*-nitroanisoil towards ammonia (abst.), 1, 169 : See also Salkowsky, E.

SALOMON, G. Paraxanthine (abst.), 5, 65 : See also Krause, H.

SANDS, F. See Elliott, A. H.

SANFORD, P. G. Gelatine explosives, - - - - - 15, 552

SARAUW, A. Action of phosgene on diazoamido compounds (abst.), 4, 175

SARRAU, E. and P. Vieille. Decomposition of gunpowder in closed vessels (abst.), 1, 399 : Heat of formation of guncotton (abst.), 2, 435

SARGENT, G. W. See Smith, E. F.

SAUER, A. Krakatoa ashes in 1883 (abst.), - - - - - 6, 127

SAUER, E. New form of air-bath, 16, 31 : New laboratory apparatus, 17, 494

SAUNDERS, W. M. Amphoteric reaction of milk - - - - - 18, (33)

SAYTZEFF, A. Oxidation of oleic acid by permanganate in alkaline solution (abst.), 7, 207 : Oxidation of oleic and elaidic acids with

permanganate in alkaline solution (abst.), 8, 42 : See also Rjabinin, C., Semlianitzin, A., and Schirikoff, A.

SAYTZEFF, P. and A. Saytzeff. Allyldipropylcarbinol (abst.), - 2, 54

SCHACHERL, G. See Garzarolli-Thurnlackh, K.

SCHÄFER, W. Examination of some musts of 1883 for acids and sugar (abst.), - - - - - 6, 243

SCHAFFER, F. See Nencki, M.

SCHAFFER, H. A., and E. F. Smith. Tungsten hexabromide, - 18, 1098

SCHANCHE, H. G. Hydrogen sulphide generator, - - - - 16, 868

SCHATZKY, E. Action of allyl iodide, butyl iodide, and zinc, upon acetone (abst.), - - - - - 7, 58

SCHAUMANN, H. Determination of albumin in urine (abst.), - 10, 197

SCHEFFER, E. Butter and its substitutes (abst.), - - - - 8, 276

SCHEFFER, J. D. R. The diffusion of some organic and inorganic compounds (abst.), - - - - - 5, 22

SCHEIBE, A. See Wildt, E.

SCHEIBLER, C. Vanillin in certain unrefined beet sugars (abst.), 2, 368

SCHERING, E. Potassium iodide containing lead (abst.), - 1, 169

SCHERTEL, A. Grey modification of tin (abst.), - - - - 1, 494

SCHEUCH, F. C. See Stone, W. E.

SCHEURER-KESTNER, A. Estimation of tartaric acid in argols (abst.), 1, 102 : Oxidation of soda lyes (abst.), 4, 73 : Influence of the ammonia soda process on the value of hydrochloric acid and chlorine (abst.), 6, 174 : Notes on the soda industry (abst.), 6, 174 : Composition of gaseous products in combustion of pyrites, and influence of Glover's tower on manufacture of sulphuric acid (abst.), 7, 124 : Experiments on the industrial value of Thompson's calorimeter (abst.), - - - - - 10, 89

SCHIFF, H. Digallic acid (abst.), 1, 161 : Analysis of organic substances containing the halogens or nitrogen (abst.), 1, 254, 337 : Determination of acetyl by means of magnesia (abst.), 1, 547 : Oxychloride and chlorides of tungsten (abst.), - - - - - 2, 182

SCHIRIKOFF, A., and A. Saytzeff. Allyldiethylcarbinol (abst.), 2, 54

SCHLAGDENHAUFFEN, F. C. Delicacy of reaction for magnesia (abst.), 1, 96

SCHMID, H. See Goldschmidt, H.

SCHMIDT, E. Identity of mercurialine with methylamine (abst.), 1, 100 : Contributions to history of methylcrotonic and angelic acids (abst.), 1, 396 : Contributions to knowledge of daturine (abst.), 2, 370 : Examination of certain musts for sugar and acid (abst.), - - - - - 7, 63

SCHMITT, C. Detection of Fahlberg's "saccharin" (abst.), - 9, 201

SCHMITT, C. E. Determination of fatty acids in oils (abst.), - 6, 100

SCHMITT, R. Constitution of dichlorazophenol (abst.), - - - - 1, 493

SCHMITT, R., and A. Goldberg. Action of chloride of lime on ethyl alcohol (abst.), - - - - - 1, 496

SCHMOEGER, M. Isomalic acid (abst.), - - - - - 1, 295

SCHMUCKER, S. C. Electrolytic separation of the metals of the second group, - - - - - 15, 195

SCHNEIDER, E. A. See Clarke, F. W.

SCHNEIDER, R. Behavior of arsenical bismuth with nitric acid, etc. (abst.), 2, 136 : Action of sulphur chloride on silver cyanide (abst.), 7, 201

SCHOBER, J. B. Volumetric determination of zinc (abst.), - - - - 1, 534

SCHÖNE, E. Hydrogen peroxide and potassium iodide (abst.), 1, 250: Estimation of hydrogen peroxide (abst.), 1, 321 : Hydrogen peroxide (abst.), - - - - 2, 50, 59, 181

SCHOLVIEN, L. Derivatives of mercury fulminate (abst.), - - - - 7, 80

SCHOOP, P. See Hell, C.

SCHORLEMMER, C. See Dale, R. S.

SCHOTT, O. Determination of iodine in varec (abst.), - - - - 1, 563

SCHOTTEN, C. Contributions to knowledge of piperidine (abst.), 4, 262: Oxidation of piperidine (abst.), - - - - 5, 133

SCHREDER, J. See Barth, L. von.

SCHREINER, L. Boiling-points of ethereal salts of alkyloxy- and hydroxy- acids (abst.), 1, 290 : Boiling-points of esters and ether-esters of oxacids (abst.), 2, 174 : See also Damm, G.

SCHRÖDT, M. Presence of nitrates and nitrites in milk, an evidence of adulteration (abst.), - - - - 9, 13

SCHRÖDER, H. Additions to the law of volumes (abst.), 1, 168: Volume constitution of sulphates, selenates, and chromates of magnesium metals (abst.), - - - - 1, 492

SCHRÖDER, M. Indicator for volumetric determination of zinc (abst.), 4, 166

SCHÜPPHAUS, R. C. Alcohols of fusel oil, - - - - 14, 45

SCHÜTT, F. *p*-Brom-*o*-amidophenol (abst.), 7, 246: Bromamidophenols (abst.), - - - - 7, 246

SCHÜTZENBERGER, P. Note on a recent work of B. Aronheim (abst.), 1, 278

SCHÜTZENBERGER, P., and A. Colson. On silicon (abst.), - - - - 4, 240

SCHULERUD, L. Chromates and dichromates (abst.), - - - - 1, 294

SCHULITZ, G. Constitution of phenanthrene (abst.), 1, 395 ; 2, 45 : See also Anschütz, R.

SCHULZ, H. Action of mono- and diphenylarsenic acid on the animal organism (abst.), 1, 159 : Action of dimethylarsenic acid on the animal organism (abst.), 1, 160 : The action of acid chlorides and bromides on quinones (abst.), - - - - 5, 19

SCHULZ, J. See Fröhling, R.

SCHULZE, B. See Weiske, H.

SCHULZE, E. Specific rotation of isocholesterin (abst.), 1, 380, 395 : Separation of asparagine from solution (abst.), 5, 63 : Practicability of Schlösing's ammonia estimation process for plant extracts (abst.), 6, 41 : See also Planta, A. von.

SCHULZE, E., and J. Barbieri. Decomposition of albuminoids in pumpkin seeds (abst.), - - - - 2, 136

SCHULZE, H. Lecture experiment (abst.), - - - - 2, 95

SCHULZE, K. E. Phorone from glycerol (abst.), 4, 176 : High boiling

phenols from coal tar (abst.), 7, 120 : Occurrence of carboxylic acids in coal tar (abst.), - - - - - 7, 249

SCHULZE. See Hartmann.

SCHUNCK, E., and H. Roemer. Detection of alizarin, isopurpurin, and flavopurpurin, and quantitative determination of alizarin (abst.), - - - - - 2, 95

SCHUSTER, A. See Roscoe, Sir H. E.

SCHWAB, J. See Hess, F., and Medicus, L.

SCHWALB, F. Non-acid components of beeswax (abst.), - - - - - 8, 229

SCHWANERT, H. Large crystals in urine (abst.), - - - - - 4, 174

SCHWARTZ, D. See Noyes, A. A.

SCHWARZ, H. Lecture experiments with zinc dust and sulphur (abst.), 5, 53

SCHWEINITZ, E. A. von. Chemical products of bacterial growth and their physiological effects, 13, 61 : See also De Schweinitz, E. A.

SCHWEITZER, H. New weighing apparatus, - - - - - 15, 190

SCHWEITZER, H., and E. Lungwitz. New muffle for incineration of sugar, - - - - - 16, 151

SCHWEITZER, P. Action of impure rain-water on lead pipes, P. 1, 66: Cause of discrepancies in estimating silver in pig lead, P. 1, 67 : Analysis of the gneiss of Manhattan Island, P. 1, 69 : Some new acid ammonium sulphates, - - - - - P. 1, 88

SEAL, A. N. Action of acid amides upon benzoin, - - - - - 18, 101

SEELHEIM, F. On the volatilization of platinum in chlorine gas, - - - - - 1, 479

SEIDEL, P. Triphenodioxazine by oxidation of orthoamidophenol (abst.), - - - - - 12, 162

SELL, W. J. Volumetric determination of chromium (abst.), - - - - - 1, 324

SELMI, F. Reaction for strychnine (abst.), 1, 341: Behavior of strychnine with iodic acid (abst.), 1, 545: Alkaloids found in the human cadaver (abst.), 1, 554 : Modification of Schneider's process for separation of arsenic in toxicological investigations (abst.), - - - - - 1, 555

SEMLIANITZIN, A., and A. Saytzeff. Oxyvalerianic acid from allyldimethylcarbinol (abst.), - - - - - 2, 178

SEMMLER, F. W. Indian geranium oil (abst.), - - - - - 12, 234

SENDERENS. See Filhol, E.

SENDTNER, R. New uranyl salts (abst.), - - - - - 1, 255

SENE, A. Cyananiline and some of its derivatives (abst.), - - - - - 7, 207

SERRANT, E. Rosolene (abst.), - - - - - 8, 56

SESTINI, F. Determination of albuminoids in food for cattle (abst.), 1, 565 : Response to the reclamation of Vincent and Delachanal (abst.), - - - - - 6, 37

SETTERGAST, H. Contributions to quantitative spectrum analysis (abst.), - - - - - 1, 374

SEUBERT, K. Atomic weight of iridium (abst.), - - - - - 1, 320

SEUBERT, K., and K. Kobbé. Constitution of some double salts of rhodium (abst.), - - - - - 12, 472

SEUBERT, K., and G. Link. Analyses of nephrites from lake dwellings (abst.), - - - - - 4, 206

SEUBERT, K., and W. Pollard. Vapor-density and melting-point of cyanogen iodide (abst.) - - - - - 12, 225

SEXTON, A. H. Determination of arsenic in copper (abst.) - - - - - 4, 167

SEYDA, A. Sulphonic acids of quinol (abst.) - - - - - 5, 239

SEYFERT, F. Starch iodide (abst.) - - - - - 10, 188

SEYLER, C. A. On the determination of the number of atoms in a molecule (abst.) - - - - - 6, 47

SHARP, J. Some of the modes of treating cotton goods practiced by Lancashire and Yorkshire dyers (abst.) - - - - - 6, 142

SHARWOOD, W. J. Notes on estimation of cyanogen by silver nitrate, 19, 400

SHAW, S. On the preparation of pentathionates (abst.) - - - - - 5, 233

SHEARER, A. See Giles, W. W.

SHENSTONE, W. A. Alkaloids of *Nux vomica*, (II). Brucine (abst.), 5, 95 ; Modified Liebig's condenser (abst.), 5, 97 : Experiments on strychnine (abst.) - - - - - 7, 116

SHENSTONE, W. A., and J. T. Cundall. Influence of temperature on the composition of hydrated calcium sulphate (abst.) - - - - - 10, 78

SHEPARD, C. U. Development and extent of the fertilizer industry, 15, 321

SHEPHERD, J. W. See Noyes, W. A.

SHERMAN, H. C. Determination of nitrogen in fertilizers containing nitrates, 17, 567 : Insoluble carbohydrates of wheat - - - - - 19, 291

SHIMER, P. W. Carbon in steel (report), 15, 283 ; Determination of iron by titration with stannous chloride (report), 15, 396 ; Determination of silica in blast-furnace slag, 16, 501 : Determination of zinc, 17, 310 ; Determination of graphite in pig iron - - - - - 17, 873

SHIMER, P. W., and S. K. Reifsnyder. Some experiments on sampling by quartation, 15, 260 : See also Drown, T. M.

SHIMIDZU, T. See Divers, E.

SHIMOSÉ, M. Separation of selenium and tellurium, and their preparation from lead-chamber deposit (abst.) - - - - - 6, 47 : See also Divers, E.

SHINN, O. L. See Smith, E. F.

SHIVER, F. S. Standardization of sulphuric acid - - - - - 17, 351

SHOCK, H. L. See Starke, F. W.

SHOREY, E. C. Two sources of error in sugar house analyses, 18, 462 : The principal amide of sugar-cane, 19, 881 : The lecithins of sugar-cane, 20, 113 : Additional notes on the sugar-cane amide, 20, 133

SIEBHR, N. Antiseptic action of acids (abst.) - - - - - 1, 496

SIEGFRIED, C. A. Note on Bütschli's experimental imitation of protoplasm - - - - - 12, 298

SIEGFRIED, L. See Albert, H.

SIEGERIED, M. Oxidation of phenol by means of nitrobenzene (abst.) - - - - - 7, 207

SIENIER, A., and G. Lowe. Test for glycerol (abst.) - - - - - 1, 339

SILBER, P. See Ciamician, G. L.

SILLIMAN, B. Dr. John Lawrence Smith (obituary), - - - - - 5, 228

SILVA, R. D. On the synthesis of diphenylethane (abst.) - - - - - 6, 191

SIMAND, F. Estimation of tannin (abst.), 4, 195; On the examination of tanning extracts (abst.), 6, 196

SIMON, S. E. Compounds of lithium chloride and magnesium chloride with alcohols (abst.), 2, 135: Preparation of alizarin-orange (abst.), 5, 20

SIMON, W. Models for illustrating the relationship between gas volumes and molecular weights, 15, 542

SIMONS, F. D. Action of certain bodies on the digestive ferment 19, 744

SKALWEIT, J. Polariscopic test in beer analysis (abst.), 1, 363: Testing essential oils for adulterations (abst.), 1, 368: Distinguishing between natural and artificial butter by means of the refractometer (abst.), 9, 14

SKRAUP, Z. H. Oxidation products of quinine (abst.), 1, 395: Composition of cinchonine (abst.), 2, 184: Oxidation products of cinchonine (abst.), 2, 185: Quinoline derivatives (abst.), 5, 25: On the synthesis of alkaloids (abst.), 7, 78

SKRAUP, Z. H., and G. Vortmann. Contributions to knowledge of cinchonidine (abst.), 2, 184

SLETER, C. See Muir, M. M. P.

SLOANE, T. O'C. Precipitation and purification of barium sulphate, 3, 37: Test for carbon disulphide and carbon dioxide in coal gas, 3, 38: Methyl violet test paper, 4, 31: Fat extracting apparatus, 4, 250: Notes on electrolytic separation of metals, 13, 140

SLOCUM, F. L. Formation of phenylangelic and phenylmethacrylic acids, etc. (abst.), 7, 143

SLOOTEN, W. VAN. Analyses of air 1, 263

SMETHAM, A. Examination of roasted coffee (abst.), 4, 189

SMITT, A. See Pettersson, O.

SMITH, A. W. Vinegar analysis and some characteristics of pure cider vinegar, 20, 3

SMITH, A. W., and N. Parks. Composition of Ohio wines, 20, 878

SMITH, B. E. Preparation of diethylnaphthylamine (abst.), 4, 200; Action of sulphuric acid on diethylnaphthylamine (abst.), 4, 201; Action of carbon oxychloride on naphthylamine (abst.), 4, 201

SMITH, E. E. Determination of fat and casein in feces 20, 101

SMITH, E. F. Determination of phosphorus in cast iron P. 1, 58; New monochlordinotrophenol and an aniline derivative of α -monochlordinotrophenol, P. 2, 111: Beryllium borate, P. 2, 114; A new base (abst.), 1, 285: Electrolytic determination of cadmium (abst.), 1, 331: Detection of iron by means of salicylic acid (abst.), 1, 335: Electrolytic estimation of cadmium (abst.), 1, 391: New results in electrolysis (abst.), 2, 43: A new base (abst.), 2, 94: Electrolytic separation, 16, 93: Professor Theodore George Wormley (obituary), 19, 275; Action of sulphur monochloride on minerals, 20, 289

SMITH, E. F., and H. C. Burr. Attempt to prepare molybdenum hexachloride, 16, 577

SMITH, E. F., and H. L. Dieck. A crystalline chromium tungstate, 15, 151

SMITH, E. F., and H. B. Harris. Electrolytic determination of ruthenium, 17, 652: Action of phosphorus pentachloride upon the dioxides of zirconium and thorium, - - - - - 17, 654

SMITH, E. F., and J. G. Hibbs. Action of hydrochloric acid gas upon sodium vanadate, 16, 578: Action of hydrochloric acid gas upon salts of the elements of group V of the periodic system - - - - 17, 682

SMITH, E. F., and V. Lenher. Action of ammonia gas on molybdenyl chloride, - - - - - 15, 61

SMITH, E. F., and P. Maas. Atomic weight of molybdenum - - - - 15, 397

SMITH, E. F., and J. M. Matthews. Uranium oxynitride and uranium dioxide - - - - - 17, 686

SMITH, E. F., and F. L. Meyer. Action of haloid acids in gas form upon the salts of elements of group V of the periodic system, 17, 735

SMITH, E. F., and J. B. Moyer. Electrolytic separation of mercury from bismuth, 15, 28: Electrolytic separations - - - - 15, 101

SMITH, E. F., and V. Oberholtzer. Action of the haloid acids upon molybdic acid, 15, 18: Action of gases upon metallic molybdenum and tungsten, - - - - - 15, 206

SMITH, E. F., and Gertrude K. Peirce. Products from nitration of metachlorsalicylic acid (abst.), 1, 288: Products of nitration of metachlorsalicylic acid (abst.), - - - - - 2, 94

SMITH, E. F., and G. W. Sargent. Action of phosphorus pentachloride upon molybdenum trioxide - - - - - 16, 425

SMITH, E. F., and O. L. Shinn. Action of ammonia gas on wolframyl chloride, 15, 68: Action of molybdenum dioxide upon silver salts, 16, 569

SMITH, E. F., and H. E. Spencer. Electrolytic separations, - - - - 16, 420

SMITH, E. F., and D. L. Wallace. Electrolytic separation of copper from antimony, 15, 32: Double bromides of palladium, 16, 465: Electrolytic separations, 17, 612: Electrolytic estimation of mercury, 18, 169: Electrolytic determinations, - - - - - 20, 279

SMITH, E. F. See also Atkinson, Elizabeth, A., Benkert, A. L., Field, C., Hibbs, J. C., Kelley, J., Lenher, V., Schaffer, H. A., Starke, F. W., Taggart, W. T., and Wallace, D. L.

SMITH, E. L. Rapid measuring pipette, - - - - - 18, 905

SMITH, I. J. See Norton, T. H.

SMITH, J. D. See Teschemacher, E. F.

SMITH, J. G. See Herty, C. H.

SMITH, J. H. See Lunge, G.

SMITH, R. A. Detection of fire-damp (abst.), - - - - - 1, 367

SMITH, W. Color reactions for aromatic hydrocarbons, etc. (abst.), 1, 544: Note on pentathionic acid in connection with Shaw's paper (abst.), 5, 234: Analysis of tars recovered in coking of coal, and in condensation of fuel gases from blast furnaces (abst.), 6, 25: Examination of tar from Sutherland's gas producers (abst.), 6, 31: By-products obtained in coking coal in the Simon-Carvés ovens (abst.), 7, 212: On wool and fur (abst.), - - - - - 10, 184

SMITH, W., and G. W. Davis. Compounds of naphthalene and benzene with antimony trichloride (abst.), 5, 60 : On the constitution of quinoline (abst.), - - - - - 5, 61

SMITH, W., and T. Liddle. Loss of soda by formation of Gay-Lussite (abst.), - - - - - 4, 74

SMITH, W., and T. Takamatke. Pentathionic acid (abst.), - - - - - 4, 199

SMITH, W. See also Claparède, A.

SMITH, W. F. Cider and vinegar, - - - - - 7, 102

SMITHHELLS, A. Some fluorine compounds of uranium (abst.), - - - - - 5, 97

SMITT, A. See Petterson, O.

SNYDER, H. Error in the determination of nitrogen by the Kjeldahl method, 13, 212 : Notes on Löwenthal's method for determination of tannin, 15, 560 : Notes on the Grandeaum method for the determination of humus in soils, 16, 210 : Action of organic and mineral acids upon soils, 17, 148 : The composition of humus, - - - - - 19, 738

SOHON, M. D. Electrical laboratory stove, - - - - - 19, 790

SOLLY, R. H. Crystallographic examination of antimony potassium chlorobromide (abst.), - - - - - 5, 114

SOMMARUGA, E. VON. Molecular weight of indigo (abst.), - - - - - 1, 254

SOMMER, A. Review of the methods of preparing hydrobromic acid, etc. (abst.), 6, 32 : Converting sulphides into sulphates by means of nitric and hydrobromic acids (abst.), - - - - - 6, 33

SOMMERKORN, H. New method to determine specific gravity of a liquid (abst.), - - - - - 2, 171

SONDÉN, K. Hygienic analysis of air (abst.), - - - - - 9, 219

SONNENSCHEIN, A. Drying of fats (abst.), - - - - - 8, 279

SORABJI, K. B. New paraffins (abst.), - - - - - 7, 66

SORET, J. L. Ultra-violet absorption spectrum of liquids (abst.), - - - - - 1, 94

SOROKINE, V. Oxidation of diallyl, and the hexyl glycol derived from it (abst.), - - - - - 1, 272

SOUBEIRAN, J. L. An *Irvingia* from Cochin China, and the fatty matter contained (abst.), - - - - - 8, 110

SOUTHWORTH, R. I. Relations of volumes of solutions of hydrated salts to their water of composition (abst.), - - - - - 1, 392

SOXHLET, F. Reducing effect of different kinds of sugar on alkaline copper solutions (abst.), 1, 342 : Gravimetical determination of fat in milk (abst.), 1, 358 : Testing milk for addition of water (abst.), - - - - - 8, 232

SPENCER, A. E. See Dennis, L. M.

SPENCER, G. L. Air drying oven, 15, 82 : Notes on caffeine, - - - - - 19, 279

SPENCER, H. E. See Smith, E. F.

SPENZER, J. G. Behavior of allylmalonic, allylacetic, and ethylidene-propionic acids when boiled with caustic soda solutions, - - - - - 17, 1

SPERRY, C. L. Heats of solution of some carbon compounds, 18, 146 : Some thoughts about liquids, 18, 724 : Molecular weights of some carbon compounds, a few words more, 20, 546 : Osmotic pressure, 20, 579

SPIEGEL, L. Determination of nitric acid, etc. (abst.), - - - - - 12, 353

SPIEGELBERG, L. Nitro-, amido-, and bromobenzenesulphonic acids (abst.), 2, 186 : See also Heinzelman, R.

SPILKER, A. See Kraemer, G.

SPITZER, F. V. Camphor chlorides (abst.), - - - - 2, 60

SPRING, W. Formation of alloys by pressure (abst.), 4, 269 : Expansion of alums (abst.), 5, 27 : Formation of arsenides by pressure (abst.), 5, 68 : Heat disengaged by the compression of solid bodies (abst.), 6, 190 : Quantities of sulphides found by compressions of their elements (abst.), 6, 190 : Differential dilatometer and its use in examinations on formation of alums (abst.), 7, 77 : Expansion of alums (abst.), 7, 77 : Specific heat of alloys of lead and tin (abst.), 8, 197 : A new acid of tin (abst.), - - - - 10, 187

SPRING, W., and G. de Boeck. On an oxide of manganese soluble in water (abst.), 9, 99 : A colloidal copper sulphide (abst.), - - - - 9, 110

SPRING, W., and E. Bourgeois. Formation of sulphuric acid during the preparation of dithionic acid (abst.), - - - - 8, 177

SPRING, W., and A. Lecrenier. Relative activity of the halogen derivatives of sulphur (abst.), 8, 164 : On the constitution of the chlorinated ethyl bisulphide of Guthrie (abst.), 10, 15 : Action of chlorine on the sulphides of alcohol radicals (abst.), - - - - 10, 16

SPRING, W., and C. Winssinger. Action of chlorine on sulphonic compounds, etc. (abst.), 4, 263: Action of chlorine on organic sulphur compounds (abst.), - - - - 6, 133

SPRINGER, A. On glychocolic ether (abst.), 1, 289 : A tribute to Pasteur (obituary), 17, 1000 : Analyses of distilled waters, - - - - 20, (46)

SQUIBB, E. R. Determination of alkaloids in cinchona bark (abst.), 4, 193 : Assay of opium (abst.), 4, 194 : Absolute alcohol, 15, 126 : Automatic zero burette, 16, 145: Improvement in the manufacture of acetone, 17, 187 : Manufacture of acetone and acetone-chloroform from acetic acid, 18, 231, (30) : Volumetric determination of acetone, 18, 1068: Improved specific gravity bottle or pyknometer, 19, 111

STAATS, G. Derivatives of *o*- and *p*-toluidine (abst.), - - - - 2, 171

STÄDEL, W. Halogen substitution products of ethane (abst.), - - - - 1, 246

STÄDEL, W. and E. Hahn. Apparatus for regulation of pressure in distillations, etc. (abst.), - - - - 1, 250

STAEDEL, W. See also Reinhardt, H.

STAHL, J. C. Apparatus for determination of fluidity of mineral oils (abst.), - - - - 8, 85

STAHL, K. F. Hydrofluoric acid, - - - - 18, 415

STAHL SCHMIDT, C. Contributions to knowledge of polyporic acid (abst.), - - - - 1, 258

STARKE, F. W., H. L. Shock, and E. F. Smith. Constitution of arsenopyrite, - - - - 19, 948

STAS, J. S. Preparation of pure hydrobromic acid (abst.), - - - - 8, 81

STAVELEY, W. W. A new alkali process (abst.), - - - - 10, 183

STEBBINS, J. H., JR. A new thiourea compound, 1, 415 : New azo-

colors, 1, 465 : Action of benzotrichloride on primary amines, 1, 524 : Some new azo-compounds (abst.), 2, 95: Action of bromanilic on secondary and tertiary monamines, 2, 109 : Substituted tolyl compounds, 2, 199 : New coloring-matters, produced by the action of diazo-compounds on phenols, 2, 236 : Some new azo-colors, 2, 446 : New azo-colors belonging to the tetrazo group, 3, 20 : A slight modification of the Wilkinson eudiometer, 3, 36 : Some new facts concerning thymole sulpho-acid, and some of its salts, 3, 103 : New salts of alpha-thymole sulpho-acid, etc., 3, 110: Combination of diazo-compounds with alpha-thymole sulpho-acid, 3, 112: Preparation of artificial indigo and some of its derivatives, 4, 81 : Analysis of galena from Newburyport, Mass., 4, 214: Analysis of pyrrhotite from Clayton, New York, 4, 214 : Action of phthalic anhydride on gallic acid, 4, 244 : Action of diazoanisole chloride upon phenoles, 5, 32, 55 : Spectra of azo-colors, 6, 117, 149 : Action of diazo- β -naphthalene on phenols, 6, 151 : Spectroscopic examination of Lauth's violet and methylene blue, 6, 304 : New green coloring-matter from benzylmethylaniline, 7, 40: Benzylmethylaniline, 7, 42 : Estimation of nitrogen in aromatic compounds by the Kjeldahl method, 7, 108 : "Lalande-Spence" primary battery, 7, 195 : Preliminary notice upon the action of benzaldehyde on commercial xylidine, 8, 173 : On the efficacy of Breyer's "micro-membrane" filter, 8, 192: A new method of estimating coloring-matter in butter and its substitutes, 9, 41 : Relative value of different pepsin tests, 10, 51 : Action of sulphuric acid on hydrochinon, etc., 13, 155 : Examination of an unusual form of spring water, 14, 115 : Estimation of potassium iodide and sodium acetate in complex organic mixtures, - - - - - 16, 157

STEIN, G. Determination of water in Turkey-red oil (abst.), - - - - 1, 367

STEINER, J. Ammoniacal copper test of Pavý (abst.), - - - - 1, 547

STELLWAY, A. Composition of barley fat (abst.), - - - - 8, 274

STEPHENS, C. W. Determination of milk sugar in milk (abst.), - - 8, 205

STERN, D. Hydrazobenzene and benzidine (abst.), - - - - 7, 59

STEUDEMANN, H. *m*-Nitrophenyl mustard oil (abst.), - - - - 5, 128

STILLMAN, T. B. Analysis of lubricating oils, 15, 265 : Chemical and physical examination of Portland cement, 15, 181 : 16, 161, 283, 323, 374: Solubility of bismuth sulphide in sodium sulphide, etc., 18, 683 : Action of nitric acid upon aluminum and the formation of aluminum nitrate, - - - - - 19, 711

STILLWELL, C. M. Occurrence of vanadium in American hematites, etc., P. 1, 84 : Estimation of precipitated or reduced phosphoric acid in superphosphates, - - - - - P. 2, 64

STILLWELL, C. M., and T. S. Gladding. Acetate of lime, manufacture, and analysis, - - - - - 4, 94

STINGL, J. Technical valuation of quick-lime (abst.), - - - - 1, 559

STINGL, J., and T. Morawski. Recovery of sulphur from sulphur dioxide and hydrogen sulphide (abst.), - - - - - 2, 289

STOCKMEIER, H. Adulteration of linseed oil with rosin oil, etc. (abst.), 8, 28

STODDARD, J. T. Demonstration of the flashing-point of kerosene, 5, 53 : New balance for first year's work in general chemistry, - 18, 189

STODDART, W. W. Logwood test for alum in bread (abst.), 1, 566 : New pepper adulterant (abst.), - - - - 10, 195

STOHMANN, F. Calorimetric method (abst.), 1, 295 : Thermo-chemical relations of the acids and alcohols of the aliphatic series (abst.), 8, 82

STOHMANN, F., and P. Rodatz. Heat of combustion of the fatty acids (abst.), - - - - 8, 83

STOKES, A. W. Asbestos tiles for combustion furnaces (abst.), - 10, 68

STOKES, A. W., and R. Bodmer. Determination of mixtures of milk sugar and cane-sugar (abst.), - - - - 7, 149

STOKES, H. N. Metaphosphinic acids, 18, (90): Chloronitrides of phosphorus, 19, (43): Metaphosphinic acids, - - - - 20, (67)

STOKLASA, J. Estimation of water in superphosphates (abst.), - 12, 412

STOLBA, F. Lead oxalate for standardizing permanganate (abst.), - 1, 586

STOLBA, [M.] Determination of alkali in silver nitrate (abst.), - 4, 165

STONE, G. C. Determination of zinc as pyrophosphate, 4, 26 : Volumetric determination of zinc, and a new indicator for ferrocyanide, 17, 473 : Remarks on Auchy's paper on the volumetric determination of manganese, 18, 230, (30): Probable production of permanganate by direct combustion of manganese, 18, 230, (30): Solubility of bismuth sulphide in alkaline sulphides, - - - - 18, 1091

STONE, G. C., and D. A. Van Ingen. Ferrocyanides of zinc and manganese, - - - - 19, 542

STONE, W. E. Carbohydrates of the sweet potato (abst.), 12, 351 : Relation of teaching to research in chemistry, 15, 665 : Comparison of methods for the determination of starch, 16, 726 : Quantitative determination of carbohydrates in food-stuffs, - - - - 19, 183, 347

STONE, W. E., and W. H. Baird. Occurrence of raffinose in American sugar beets, - - - - 19, 116

STONE, W. E., and F. C. Scheuch. Method for determining calcium oxide in quicklime, - - - - 16, 721

STONE, W. E., and H. E. Wright. Notes on taka-diastase, - 20, 639

STORCH, L. Action of ammonium salts on glycerol (abst.), - - - - 8, 273

STRASBURGER, J. On *p*-amidofluorene (abst.), - - - - 6, 86

STREATFIELD, F. W. See Japp, F. R.

STRECKER, W. See Lippmann, E.

STRIEDINGER, J. H. Detonating submerged nitroglycerine compounds by means of concussion, - - - - P. 1, 2, 2

STROMAN, A. Crystallized mercurous iodide and bromide (abst.), - 9, 209

STROMEYER, A. Determination of acetic acid in crude pyrolignite of lime (abst.), - - - - 1, 367, 582

STUART, C. M. Condensation products formed by benzaldehyde with malonic and isosuccinic acids (abst.), - - - - 5, 237

STUART, T. W. The Tees salt industry (abst.), - - - - 10, 159

STÜNKEL, C. On daphnetin (abst.), - - - - 1, 167

STUTZER, A. Albuminoids (abst.), - - - - - 2, 225
 STUTZER, A., and O. Reitmair. Determination of nitrogen in fertilizers containing nitrates (abst.), - - - - - 9, 13
 STUTZER, J. See Isbert, A.
 SUIDA, W. See Liechti, L.
 SUILLOTS, H., and H. Raynaud. Manufacture of iodoform (abst.), 10, 189
 SUMMERS, B. S. Carbon determinations in pig iron, - - - - - 18, 1087
 SUTHERLAND, D. A. Note on saccharin (abst.), - - - - - 9, 217
 SWAIN, R. E. See Young, S. W.
 SZILASI, J. See Grittner, A.
 SZYMANSKI, F. Allylsulphuric acid and some of its salts (abst.),
 7, 208 : See also Deichmüller, A.
 TAFEL, J., and C. Enoch. Formation of alkyl derivatives of amides (abst.), - - - - - 12, 159
 TAFEL, J. See also Fischer, Emil.
 TAFFE, H. Detection of salicylic acid in foods (abst.), - - - - - 9, 15
 TAGGART, W. T., and E. F. Smith. Separation of manganese from tungstic acid, - - - - - 18, 1053
 TAKAMATKE, T. See Smith, W.
 TAKAMINE, J. See Mills, E. J.
 TAKAYAMA, J. On Japanese tea and tobacco (abst.), - - - - - 6, 312
 TALBOT, H. P., and A. G. Woodman. Analysis of an iron rail taken from a gallery of an unused coal mine, - - - - - 19, 9
 TALBOT, H. P. See also Fay, H.
 TAMM, A. Determination of phosphorus in iron and iron ores (abst.), 6, 193
 TAMMANN, G. Detection and determination of fluorine (abst.), - - - - - 7, 295
 TANATAR, S. Preparation of dioxyfumaric acid (abst.), 2, 172 ; Maleic and malic acids from α -dibrompropionic acid (abst.), - - - - - 2, 172
 TANRET, C. Proximate principles of the bitter orange (abst.), 8, 202 :
 The sugars of hesperidin and isohesperidin (abst.), - - - - - 10, 79
 TASSIN, W. New blowpipe reagent, 19, (24) : Preparation of crystals, - - - - - 20, (3)
 TATLOCK, R. R. Determination of nitric nitrogen in guano (abst.), 1, 355
 TATTERSALL, J. New test for papaverine (abst.), - - - - - 1, 545
 TATTERSALL, T. Test for cobalt (abst.), - - - - - 1, 109
 TENNILLE, G. F. Phosphomolybdic test as applied to lard analysis, 17, 33 : Determination of solid fats in compound lards, - - - - - 19, 51
 TERNE, B. Legislation on fertilizer analysis, - - - - - 10, 2
 TERREIL, A. Analysis of metallic fragments from Peruvian sepulchres (abst.), 1, 276 : Atomic weight of aluminum (abst.), 1, 277, 321 ;
 Determination of fusing-points (abst.), - - - - - 1, 375
 TERREIL, A., and A. Wolff. Resin of rose-wood (abst.), - - - - - 2, 431
 TERREIL, H. Some peculiarities of commercial orpine and on depilation of hides (abst.), - - - - - 8, 97
 TESCHEMACHER, E. F., and J. D. Smith. Estimation of phosphoric acid for commercial purposes (abst.), 1, 353 : Determination of morphine in opium (abst.), - - - - - 10, 45

TEXTOR, O. See GABBA, L.

THAYER, E. F. See Cameron, F. K.

THENARD, P. On black phosphorus (abst.), - - - - - 4, 272

THIERCELIN, L. Preparation of ashes for extraction of iodine from seaweeds (abst.), - - - - - 2, 434

THOLLON, L. New compound prism (abst.), - - - - - 1, 172

THOMAS, C. Detection of Bordeaux red in wines (abst.), - - - - - 4, 191

THOMAS, E. G. P. See Witt, O. N.

THOMAS, J. W. Analysis of combustible gases (abst.), - - - - - 1, 372

THOMAS, W. S. Methods for the determination of manganese - - - - 17, 341

THOMPSON, C. See Wright, C. R. A.

THOMPSON F. See Campell, E. D.

THOMPSON, G. R. See Bothamley, C. H.

THOMPSON, W. P. The patent law (English) as amended in 1883 (abst.), 6, 26 : On Rave's process for the utilization of acid tar residues of petroleum manufacturers (abst.), - - - - - 10, 93

THOMSEN, J. Thermochemical investigations (abst.), 1, 293 : Action of hydrogen sulphide on cupric salts (abst.), 1, 332 : Heat of formation of cuprous chloride (abst.), 2, 171 : Heat of formation of cyanogen (abst.), 2, 171 : [Refraction and heat of combustion (abst.), 4, 176 ; Heats of combustion of benzene, dipropargyl and acetylene : constitution of benzene (abst.), - - - - - 4, 229

THOMSEN, T. Researches on the composition of wood (abs.), 1, 295 ; Optical rotation of malic acid, etc. (abst.), - - - - - 4, 263

THOMSON, A. C. Substitute for gas in blast-lamp (abst.), - - - - - 1, 91

THOMSON, J. A new antiseptic soap (abst.), - - - - - 10, 92

THOMSON, J. M., and W. P. Bloxam. Crystallization from saturated solutions of compound salts (abst.), - - - - - 4, 261

THOMSON, J. S. Preparation of distilled water free from ammonia (abst.), - - - - - 1, 586

THOMSON, R. T. Use of rosolic acid, methyl orange, etc., as indicators (abst.), - - - - - 6, 49, 242

THOMSON, W. See Allen, A. H.

THORÉ. New saccharimeter (abst.), - - - - - 1, 92

THORNE, L. T. Apparatus for fractional distillation under reduced pressures (abst.), 5, 114 : Industrial applications of oxygen (abst.), - - - - - 10, 197

THORPE, T. E. Heptane from *Pinus sabiniana* (abst.), 1, 286 : Zinc, magnesium, and iron, as reducing agents with ferric salts (abst.), 4, 223 ; Action of oxychlorides of sulphur on silver nitrate (abst.), 4, 223

THORPE, T. E., and S. Dyson. Action of thiophosphoryl chloride on silver nitrate (abst.), - - - - - 4, 224

THORPE, T. E., and J. I. Watts. Specific volume of water of crystallization (abst.), - - - - - 2, 350

THORPE, T. E. See also Roscoe, Sir H. E.

THRESH, J. C. Estimation of small quantities of alcohol (abst.), 1, 574 : Analysis of Buxton thermal water (abst.), - - - - - 4, 170

TIBIRİÇÂ, J. See Merz, V.

TİDY, C. M. Determination of organic purity of waters (abst.), 1, 106: See also Crookes, W.

TIEMANN, F. Aromatic amido-acids (abst.), 2, 370; Action of hydroxylamine on nitriles (abst.), 6, 160: Behavior of amidoximes and azoximes (abst.), 8, 75: See also Baumann, E., and De Laire, G.

TIMCKE T. Action of amines on quinone (abst.), - - - - - 8, 23

TLEISNER, F. See Fleissner, F.

TLINSKI, M. Action of ammonia on nitrosophenols (abst.), 7, 86: Separation of nickel and cobalt (abst.), - - - - - 7, 250

TOBIAS, G. Behavior of alkaline phosphates towards some indicators (abst.), - - - - - 5, 53

TODD, A. M. Treatment and distillation of peppermint plants (abst.), 10, 117

TÖNNIES, P. Action of nitrosyl chloride on unsaturated hydrocarbons (abst.), - - - - - 1, 170

TOLLENS, B. Ammoniacal alkaline silver solution as reagent for aldehyde (abst.), - - - - - 5, 50

TOLLENS, B., H. Hosäus, P. Rave, and P. Wigand. Synthesis of polyhydric alcohols by means of formaldehyde - - - - - 15, 704

TOLLENS, B., P. Wigand, and P. Rave. Pentaerythrol - - - - - 15, 706

TOLLENS, B. See also Allen, E. W., Deichmüller, A., Gunther, A., Herrmann, P., Kent, W. H., and Rave, P.

TOMICEK, F. See Brauner, B.

TOMMASI, D. Determination of ozone in the air (abst.), 4, 162: Heat of formation of soluble fluorides (abst.), 6, 74: Note on non-existence of ammonium hydroxide (abst.), 6, 189: Electrolysis of a few chemical compounds (abst.), - - - - - 8, 19

TOMMASI, D., and Radiguet. Battery with elements of coal without metals (abst.), - - - - - 9, 38

TOPF, G. Iodometric studies (abst.), - - - - - 9, 33

TORNÖE, H. Results of Norwegian North Sea expedition (abst.), - - - - - 1, 496: 2, 289

TÓTH, J. Determination of phenol in crude carbolic acid (abst.), - - 8, 79

TRAUB, M. C. Action of phthalic anhydride on quinoline (abst.), 5, 67

TRAUBE, J. See Bodländer, G.

TRAUBE, M. Production of active oxygen (abst.), 4, 207; 5, 19: Behavior of platinum or palladium towards carbon monoxide or hydrogen in presence of oxygen and water (abst.), - - - - - 5, 62

TRESKOW, H. Apparatus for measuring sterilized solutions (abst.), 9, 123

TREVOR, J. E. Fundaments of chemical theory, 15, 430: The achievements and aims of physical chemistry, - - - - - 16, 516

TRIBE, A. See Gladstone, J. H.

TRIMBLE, H., and J. C. Peacock. Preparation of oak tannins, with special reference to the use of acetone as a solvent, - - - - - 15, 344

TROOST, L. Distillation of a heterogeneous liquid (abst.), 1, 401: New compounds of nitric acid and acetic acid with ammonia (abst.),

4, 234 : Molecular weight of phosphorus iodides (abst.), 4, 272 :
 On the oxide of thorium (abst.), - - - - - 7, 285

TROST, E. Salts of platinum (abst.), 8, 176 : Action of zinc dust on
 benzyl chloride (abst.), - - - - - 8, 181

TROWBRIDGE, P. F. Periodides of pyridine, - - - - - 19, 322

TROWBRIDGE, P. F., and O. C. Diehl. Halides and perhalides of pyri-
 dine, - - - - - 19, 558

TROWBRIDGE, P. F. See also Prescott, A. B.

TRUBEK, M. Estimation of extraction in sugar houses, - - - - - 17, 920

TSCHAPLOWITZ, F. Apparatus for estimation of fats (abst.), 1, 586 :
 New form of volumenometer (abst.), - - - - - 1, 586

TSCHELTZOFF. Determination of nitrogen in explosives (abst.), - - - - - 1, 542

TSCHERNIAC, J., and R. Hellon. Sulphocyanacetone (abst.), - - - - - 5, 122

TSCHERNIAC, J., and C. H. Norton. Sulphocyanpropimine (abst.), 5, 122

TSCHERNIAC, J. See also Grimaux, E., and Norton, T. H.

TSCHIJEWSKY, P. Volatilization of salts on evaporation of solutions
 (abst.), - - - - - 6, 157

TSCHIRCH, A. Preparation of pure chlorophyll (abst.), - - - - - 6, 89

TSCHIRIKOFF, A. Analysis of coal (abst.), - - - - - 6, 128

TUCKER, J. H. Solvent action of carbonic anhydride in solution, 3, 26

TURNER, F. See Frankland, P. F.

TURNER, T. Eutexia (abst.), 7, 113 : Influence of silicon on the prop-
 erties of iron and steel (abst.), - - - - - 10, 159

TWITCHELL, E. Separation of solid and liquid fatty acids, - - - - - 17, 189

TYPKO, P. G. W. Nitro-derivatives of resorcinol (abst.), - - - - - 5, 129

ULBRICHT, R. Reducing effect of different kinds of sugar on alkaline
 copper solution (abst.), - - - - - 1, 342

ULEX, G. Foreign seeds in rape-seed cake (abst.), - - - - - 4, 193

UNGER, B. Analysis of vulcanized rubber, etc. (abst.), - - - - - 7, 178

URECH, F. Action of potassium carbonate on isobutylaldehyde
 (abst.), 1, 292 : On Lilienfein's lamp, for low boiling petroleum
 (abst.), 6, 106 : See also Hell, C.

VALEUR, F. See La Coste, W.

VANDERPOEL, F. Dropping flask for standard solutions, - - - - - 16, 156

VANGEL, B. Action of dehydrating substances on acids (abst.), - - - - - 2, 369

VAN HASSELT, A. Determination of sodium compounds in potassium
 carbonate (abst.), - - - - - 4, 165

VAN INGEN, D. A. See Stone, G. C.

VAN SLYKE, L. L. Composition of cow's milk, 15, 645 : Composition
 of American cheddar cheese, 15, 605 : Determination of casein in
 cow's milk, 15, 635 : Determination of albumen in cow's milk, 16, 712

VARENNE, E. Researches on the coagulation of egg albumin (abst.),
 8, 73 : See also Prunier, L.

VERITCH, F. P. Modifications of the Pemberton method for determin-
 ing phosphoric acid, - - - - - 18, 389

VERLEY, V. H. Higher oxides of manganese and their hydrates
 (abst.), 4, 168 : Rate of decomposition of ammonium nitrate (abst.), 5, 235

VENABLE, F. P. Heptylene from heptane of *Pinus sabiniana*, 4, 22 : Action of alcoholic potash on heptylene bromide, 4, 254 : Heptylmalonic and heptylacetic acids, 5, 10 : Zinc in drinking water, 6, 214 : Analysis of the leaves of *Ilex cassine*, 7, 100 : An examination of the chlorides of zirconium, 16, 469 : Modified arrangement of the elements under the natural law, 17, 75 : Chlorides of zirconium, 17, 842 : Early arrangement of the elements, 17, 947 : Revision of the atomic weight of zirconium, 20, 119 : Modified air-bath, 20, 271

VENABLE, F. P., and C. Baskerville. Zirconium sulphite, 17, 448 : Oxalates of zirconium, 19, 12 : Oxyhalides of zirconium, 20, 321

VENABLE, F. P., and A. W. Belden. Properties of zirconium dioxide, 20, 273 ; Note on liquid phosphorus, 20, 303

VENABLE, F. P., and T. Clarke. Properties of calcium carbide, 17, 306 : Study of the zirconates, 18, 434

VENABLE, F. P., and F. W. Miller. Nature of the change from violet to green in solutions of chromium salts, 20, 484

VERNEUIL, A. Action of iodine on potassium selenocyanate (abst.), 6, 34 : Action of non-metals on selenocyanates (abst.), 8, 179 : Preparation of a calcium sulphide with violet phosphorescence (abst.), 8, 199

VERNEUIL, A., and L. Bourgeois. Artificial production of crystallized ferric arsenate (abst.), 2, 132

VERSON, E. *Botrytis bassiana* and its crystalline products, 16, 860

VIEILLE, P. See Berthelot, M., and Sarrau, E.

VIETH, P. Average composition of milk (abst.), 8, 28 : Presence of matter soluble in ether in filter-paper (abst.), 8, 279 : Average composition of milk (abst.), 10, 47, 190

VIGNAL, H. Determination of chromium (abst.), 8, 77

VIGNON, L. Action of water on stannic chloride (abst.), 12, 71 : Technical analysis of water (abst.), 12, 73 : See also Barbier, P.

VIGNON, P. Separation of iron and aluminum (abst.), 7, 124

VILLE, J. Crystallized zinc hydroxide (abst.), 7, 285

VILLEJEAN. See Dalché.

WILLIERS, A. Oxalic acid (abst.), 2, 430 : On tetraniitroethylene bromide (abst.), 6, 131 : On nitrated derivatives of ethylene hydride (abst.), 6, 131 ; Formation of ptomaines in cholera (abst.), 7, 80 : On pathological urine (abst.), 7, 288 : Detection of sulphites in the presence of thiosulphates and sulphates (abst.), 9, 117 : A new oxacid of sulphur (abst.), 10, 76

VINCENT, C. Nitriles in pyrogenous products from beet root residues (abst.), 1, 277 : Reactions of dimethylamine with metallic solutions (abst.), 2, 133 : Three new compounds of rhodium (abst.), 7, 283 : Reactions of the aqueous solution of dipropylamine with metallic salts (abst.), 8, 201

WINCENT, C., and J. Chappuis. Action of alcoholic chlorides on ammonia and on methylamines (abst.), 8, 95

VINCENT, C., and B. Delachanal. Density and coefficient of expansion of methyl chloride (abst.), 1, 271 : Properties of mixtures of methyl cyanide with methyl and ethyl alcohols (abst.), 2, 430 : Tannic acid contained in the berries of the sorbus tree (abst.), 9, 101

VÖLTZKOW, M. See Liebermann, C.

VOGEL, H. W. Influence of light on chemical processes (abst.), 1, 93 : Investigations on adulterations of wine (abst.), 1, 578 : New lines in the spectrum of hydrogen, and the dissociation of calcium (abst.), - - - - - 2, 226

VOGEL, J. H. Thomas slags (abst.), 9, 118 : Determination of phosphoric acid in Thomas slags (abst.), - - - - - 9, 119

VOLCKENING, G. J. Mechanical arrangement of fat extraction apparatus, - - - - - 19, 735

VOLHARD, J. Silver titration with ammonium thiocyanate for determination of halogens, copper, and mercury (abst.), - - - - - 1, 323

VOLHARD, J., and H. Erdmann. Synthetical production of thiophen (abst.), - - - - - 7, 230

VOLNEY, C. W. On the decomposition of phosphates by sodium acid sulphate, 7, 238 ; 8, 32 : On the decomposition of sodium nitrate and the distillation of nitric acid, 13, 246 : Composition of baryto-celestite, 13, 290 : American lithographic stones, 14, 376 : Apparatus for fractional distillation, - - - - - 16, 160

VOORHEES, C. L. See Osborne, T. B.

VORTMANN, G. Identification and determination of chlorine in presence of bromine and iodine (abst.), 2, 368 : See also Lippmann, E., Messinger, J., and Skraup, Z. H.

VRAU, G. See Bleunard, A.

VRIJ, J. E. de. Determination of alkaloids in cinchona bark (abst.), 4, 193 : Detection of cinchonidine in quinine sulphate (abst.), 8, 233

VULPIUS, G. Thallin compounds (abst.), 7, 84 : Almond oil testing (abst.), - - - - - 8, 87

WAAGE, P. Studies on the ebullioscope (abst.), 1, 572 : See also Guldberg, C. M.

WADMAN, W. E. Cream of tartar substitutes : their chemistry and analysis, - - - - - 16, 333

WAGNER, A. Automatic regulator for evaporation, etc. (abst.), 1, 584 : Test for adulteration in butter (abst.), - - - - - 8, 40

WAINWRIGHT, J. H. Estimation of morphine in opium, 7, 45 : The examination of commercial glycerol, 11, 125 : The Chapman washing-bottle, 13, 126 : Determination of solid fat in artificial mixtures, etc., 18, 259 : Volumetric determination of lead, - - - - - 19, 389

WAIT, C. E. Analysis of bindheimite, 1, 134 : An earthy ferric sulphate from Arkansas, 4, 61 : Convenient still for the laboratory, 17, 917 : Oridation of silver, 18, 254 : The occurrence of titanium, 18, 402

WALDBOTT, S. On the volatility of borax, 16, 410 : On the volatility of sodium fluoride, - - - - - 16, 418

WALKE, W. Determination of the strength of various high explosives 12, 256

WALKER, J. See Carnelley, T.

WALKER, J. F. Ethers of nitrosophenol (abst.), - - - - - 7, 87

WALKER, P. H. Use of organic bases in preparation of calcium and barium ferrocyanides, 17, 927 : Applications of hydrogen peroxide to quantitative analysis, - - - - - 20, 513

WALLACE, D. L., and E. F. Smith. Electrolytic determination of cadmium, - - - - - 19, 870

WALLACE, D. L. See also Smith, E. F.

WALLACH, O. Azo dye-stuffs (abst.), 4, 173 : Formation of basic compounds from amides (abst.), 4, 206 : Oxalines and glyoxalines (abst.), 5, 19 : Chemistry of the terpenes and essential oils (abst.), - - - - - 7, 121, 246

WALLACH, O., and O. Bischof. Decomposition of dichloracrylic acid by alkalies (abst.), - - - - - 1, 163

WALLACH, O., and W. Brass. *Oleum cynae*. Contribution to knowledge of the terpenes (abst.), - - - - - 7, 122

WALLACH, O., and A. Kölliker. Action of hydrochloric acid upon amidoazo-compounds (abst.), - - - - - 7, 86

WALLER, E. Water supply of the city of New York, 4, 15 : Examination of methods of determining phosphorus in iron ores, 4, 88 : Review of papers on analytical chemistry, 4, 160 : Review of papers on analytical chemistry (proximate,) 4, 188 : Precipitation of barium sulphate, 4, 212 : Peculiar reaction with lead acetate, 4, 213 : On the examination of snow water, 6, 187 : Sanitary examinations of some waters, 8, 147 : Examination of butter fat and its substitutes, 8, 155 : Notes on the analysis of zinc ores, 11, 49 : Note on the purification of alcohol, 11, 124 : Determination of lithia in mineral waters, 12, 214 : Experiments in milk analysis, 13, 52 : Note on the action of waters on lead pipe, 13, 176 : Laboratory devices, 16, 869 : See also Chandler, C. F.

WALTER, J. Hand regulator for projection of spectra by electric light (abst.), - - - - - 7, 141

WALTZ, G. Propyl- and isopropylsuccinic acids (abst.), - - - - - 4, 270

WALZ, I. Occurrence of vanadium in American magnetites, P. 1, 58: Regularities of color and color-changes, - - - - - P. 1, 128

WANKLYN, J. A. Gas making by Cooper's lime process, with a method of gas analysis (abst.), 6, 31 : On milk analysis (abst.), 8, 43

WANKLYN, J. A., and W. C. Cooper. Organic analysis in the wet way (abst.), - - - - - 1, 542

WANKLYN, J. A. See also Fox, W.

WARDER, R. B. Determination of caustic alkali in presence of carbonate (abst.), 4, 165 : Speed of dissociation of brass (abst.), 6, 75 : Problems of physical chemistry, 14, 360 : Cross-fertilization of the sciences, - - - - - 15, 601

WARINGTON, R. Determination of nitric acid as nitric oxide (abst.), 1, 540 : Determination of nitric acid by means of indigo (abst.), 1, 541 : Determination of nitric acid as nitric oxide (abst.), 4, 258:

Determination of nitric acid in soils (abst.), 4, 258 : Nitrification (abst.), 7, 23 : On tests for nitrous and nitric acids (abst.), 7, 61 : Behavior of nitrates in Kjedahl's process (abst.), 7, 290 : Chemical actions of some micro-organisms (abst.), 10, 84 : See also Grosjean, B. J., and Lawes, J. B.

WARNECKE, G. See Atwater, W. O.

WARREN, H. N. Apparatus for preparing sulphurous, carbonic, and phosphoric anhydrides (abst.), 9, 175 : Pressure tubes (abst.), 10, 69 : Electrolytic method of liquefying gases (abst.), - - - 10, 78

WARREN, T. T. P. B. Water supply to steam boilers (abst.), 10, 172 : Sensibility of earth-nut oil to heat when electrified (abst.), 10, 173

WARTH, C. See Kelbe, W.

WASON, R. S. See Noyes, A. A.

WATKINS, W. H. See Noyes A. A.

WATSON, W. H. Detection of milk adulteration (abst.), - - - 1, 570

WATTS, F. Determination of carbon and silicon in iron, steel, etc. (abst.), - - - - - 4, 165

WATTS, J. I. See Thorpe, T. E.

WAYSS, A. See Gasiorowski, K.

WEBER, A., and R. Heim. Preparation of aromatic ethereal salts of phosphoric acid (abst.), - - - - - 5, 18

WEBER, A., and N. Wolff. Perchlorophenol from perchlorobenzene (abst.), - - - - - 7, 228

WEBER, A. See also Ris, C.

WEBER, H. A. Note on Aragonite, 1, 79 : Notes on certain reactions for tyrotoxicon, 12, 485 : Occurrence of tin in canned food, 13, 200 : Raphides, cause of acridity in certain plants, 13, 215 : Behavior of antiseptics toward salivary digestion, 14, 4 : Behavior of coal-tar colors towards the process of digestion, 18, 1092 : Root tubercles in water culture, - - - - - 20, 9

WEBER, H. A., and W. McPherson. Determination of cane sugar in the presence of commercial glucose, 17, 312 : Action of acetic and hydrochloric acids on sucrose - - - - - 17, 320

WEBSTER, C. S. Analysis of certain plant fibres (abst.), 5, 92 : Chlorination of pyrogallol (abst.), - - - - - 6, 238

WEDDIGE, A. Derivatives of *o*-amidobenzamide (abst.), - - - - - 7, 144

WEDDIGE, A., and M. KÖRNER. A polymeric dichloracetonitrile (abst.), - - - - - 7, 177

WEDDING, W. Apparatus for measuring volumes of solids (abst.), 1, 90

WEGER, F. See Ritthausen, H.

WEIDEL, H., and G. L. Ciamician. Substances from tar produced by destructive distillation of animal substances (abst.), - - - 2, 97

WEIGELT-RUFACH, C. Determination of extract in wine (abst.), - - 7, 63

WEIGERT, L. Determination of acetic acid in wine (abst.) - - - 1, 364

WEIL, F. Volumetric determination of zinc powder (abst.), - - - 9, 36

WEINBERG, A. Oxydiphenyl bases (abst.), - - - - - 10, 18

WEINHOLD, A. Apparatus for distillation of mercury (abst.), - - - 1, 376

WEISKE, H. Estimation of nitrogen in milk and urine of herbivora (abst.), - - - - - 8, 279

WEISKE, H., B. Schulze, and E. Flechsig. Digestibility of cotton-seed cake and meal (abst.), - - - - - 8, 60

WEITH, W. Constitution and synthesis of carbotriphenyltriamine (abst.), 1, 166: See also Merz, V.

WELLER, A. Detection and estimation of titanium (abst.), - - - - - 5, 54

WELLS, H. L., and W. L. Mitchell. Volumetric determination of titanic acid and iron in ores - - - - - 17, 878

WELLS, J. S. Estimation of phosphoric acid in fertilizers (abst.), - - - - - 7, 210

WELSH, W. See Pechmann, H. von.

WELTNER, A. Action of chlor- and bromacetone, etc., on ethyl acetoacetate (abst.), - - - - - 6, 85

WENDER, N. Viscosimetric examination of butter for foreign fats, - - - - - 17, 719

WERIGO, B., and P. G. Melikoff. Formation of monochlorlactic acid and dichlorpropionic acid from glyceric acid (abst.), - - - - - 1, 289

WERNER, A. See Hantzsch, A.

WERNER, E. Substitution of bromine for phenolic hydrogen (abst.), 7, 145: See also Berthelot, M.

WESELSKY, P., and R. Benedikt. Some azo-compounds (abst.), 1, 394: Azophenols (abst.), - - - - - 2, 65

WESSON, D. Examination of lard for impurities, - - - - - 17, 723

WESTESSON, J. Determination of nickel in steel, - - - - - 16, 110

WETHERED, E. Composition of Pennant grits, etc. (abst.), - - - - - 4, 144

WEYL, T., and C. Bischoff. On gluten (abst.), - - - - - 2, 370

WEYL, T. See also Frenzel, J.

WHEELER, H. A., and C. Luedeking. Iodide coatings and sublimates (abst.), - - - - - 10, 26

WHEELER, H. J. See Winton, A. L.

WHITEHEAD, C. Estimation of tellurium in copper bullion, 17, 280: Tellurium: separation from copper residues, etc., - - - - - 17, 849

WHITEHORN, T. N. Action of sodium chloride on solutions of soaps (abst.), - - - - - 8, 104

WHITFIELD, J. E. See Blair, A. A., and Gooch, F. A.

WHITNEY, W. R. See Noyes, A. A.

WICKHORST, M. H. Manufacture of phosphor bronze, 19, 393: Analysis of alloys containing phosphorus, - - - - - 19, 396

WIDMANN, O. Synthesis of thymol from cuminol (abst.), - - - - - 4, 205

WIEDEMANN, G. H. Relations between physical constants of chemical compounds (abst.), - - - - - 4, 264

WIGAND, P. See Tollens, B.

WIGNER, G. W. Koettstorfer's method for testing butter (abst.), 1, 568

WILBER, F. A. See Austen, P. T.

WILDERMAN, M. Boiling-points of bodies, a function of their chemical nature (abst.), - - - - - 12, 234

WILDT, E., and A. Scheibe. Estimation of nitric acid (abst.), - - - - - 6, 240

WILEY, H. W. Rotary power of commercial glucose and grape sugar, 2, 387 : Effect of heating with dilute acids and treating with animal charcoal, on the rotary power of glucose, etc., 2, 395 : Composition of maple sugar and syrup (abst.), 7, 92 : Analysis of seed of *Calycanthus glaucus* (abst.), 12, 15 : Influence of food and animal idiosyncrasy on composition of butter (abst.), 12, 16 : Pine tree sugar, 13, 228 : Honey from the aphis, or plant louse, 14, 350 : Announcement of the joint committee on the World's Fair Chemical Congress, 15, 43 : World's Congress Auxiliary of the World's Columbian Exposition, 15, 106 : Lamp for constant monochromatic flame, 15, 121 : Improved extraction apparatus, 15, 123 : Address of Welcome to the World's Chemical Congress, 15, 301 : The waste and conservation of plant food (presidential address), 16, 1 : Notice of meeting of Official Agricultural Chemists, 16, 431 : Assimilation of free nitrogen, a correction, 16, 432 : The Chemical Midwinter Fair Congress at San Francisco, 16, 645 : The synthetic food of the future (presidential address), 17, 155 : Recent advances in milk investigations, 18, (73) : Use of acetylene gas as an illuminant for polaroscopic work, 18, 179, (37) : Estimation of levulose in honey, 18, 81, 189 : Determination of the heat of bromination of oils, 18, 378, (58) : Second International Congress of Applied Chemistry, 18, 923 : Modified form of ebullioscope, 18, 1063 : Mechanical analysis of basic phosphatic slags, 19, 19 : Recovery of waste platinum chloride, 19, 258 : Determination of potash and phosphoric acid in fodders, 19, 320 : Influence of vegetable mold on nitrogenous content of oats, 19, 605.

WILEY, H. W., and W. D. Bigelow. Determination of the hydro-thermal value of a bomb calorimeter, 19, 439 : Heat of combustion of cereals and cereal products, 20, 304

WILEY, H. W., and E. E. Ewell. Determination of lactose in milks, 18, 428 : A correction, 18, 1111

WILEY, H. W., and W. H. Krug. Standard methods for the estimation of starch, 20, 253

WILEY, H. W. See also Ewell, E. E., Krug, W. H., and Runyan, E. G.

WILFARTH, H. Determination of nitric acid (abst.), 10, 192

WILKES, J. F. Decomposition of potassium cyanide, 6, 222

WILL, H. Volumetric determination of boric acid (abst.), 10, 43

WILL, W. Bodies produced by action of alcoholic iodides on sul- phocarbanilide (abst.), 4, 230

WILL, W., and I. Pinnow. Analysis of a meteorite of Carcote, Chili (abst.), 12, 155

WILLGERODT, C. Picrylsulphonic acid and sodium picrylsulpho- nate (abst.), 7, 288

WILLIAMS, C. B. Estimation of phosphoric acid in soils, etc., 17, 925

WILLIAMS, C. P. Analysis of mine water from the lead region of Missouri, P. 1, 179

WILLIAMS, G. Substitute for litmus (abst.), 1, 110 : Occlusion of hydrogen by zinc dust, etc. (abst.), 7, 113 : Source of the hydrogen occluded by zinc (abst.), - - - - - 7, 286

WILLIAMS, J. See Harrison, J. B.

WILLIAMS, R. Adulteration of tallow with cotton-seed oil (abst.), 10, 86 : Examination of gums and resins (abst.), 10, 157 : Citric acid in lemon juice (abst.), - - - - - 10, 195

WILLIAMS, R. P. Electrolytic process for manufacture of white lead, - - - - - 17, 835

WILLIAMS, S. W. The nomenclature and notation of alkaloidal salts, - - - - - 11, 130

WILLM, E. Mineral waters of the Auvergne (abst.), 1, 271 : Analysis of waters of the Bourboule (abst.), 2, 365 : Mineral waters containing iron and nitrates (abst.), 2, 431 : Manufacture of cyanides and ferrocyanides by the aid of trimethylamine (abst.), 6, 199

WILLS, E. J., and K. L. Barr. Precipitations of alums by sodium carbonate (abst.), - - - - - 4, 258

WILM, V. von. Determination of fat in palm nut meal (abst.), 8, 28

WILSON, L. F. Butter analysis (abst.), - - - - - 11, 54

WINGARD, C. von. Examination of humite minerals (abst.), - - 7, 226

WINKLER, C. Generation of hydrogen sulphide (abst.), 10, 65 : Reduction of oxygen compounds by magnesium (abst.), - - - - - 12, 152

WINSSINGER, C. See Spring, W.

WINTHER, A. See Neville, R. H. C.

WINTON, A. L. Conditions affecting the accuracy of the determination of potash as potassium platinichloride, 17, 453 : Modified ammonium molybdate solution, - - - - - 18, 445

WINTON, A. L., and H. J. WHEELER. The Lindo-Gladding method of determining potash, - - - - - 20, 597

WISLICENUS, W. Action of potassium cyanide on phthalide (abst.), 7, 204

WITT, O. N. Azo-derivatives of diphenylamine and diphenylnitroso-amine (abst.), 1, 396 : Contributions on the indulines (abst.), 6, 81 : On indophenols, 6, 82 : Nitroso-derivatives of aromatic diamines (abst.), 8, 55 : Progress in manufacture and use of artificial coloring matters - - - - - 15, 456

WITT, O. N., and E. G. P. Thomas. Researches on the induline group (abst.), - - - - - 5, 96

WITT, O. N. See also Nöltning, E.

WITTENBERG, M., and V. Meyer. On benzil (abst.), - - - - - 5, 126

WITZ, G., and F. Osmond. Extraction of vanadium from basic slags of Creusot (abst.), 4, 241 : Oxycellulose for determination of vanadium (abst.), - - - - - 8, 78

WOLCKENHAAR. Determination of the specific gravity of butter and tallow at 100° (abst.), - - - - - 8, 205

WOLFBAUER, F. Method for the determination of the freezing-point of fatty acids - - - - - 16, 665

WOLFF, A. See Terreil, A.

WOLFF, C. H. Methods of quantitative spectral analysis (abst.), 1, 84 : Spectroscopic reactions of ergot (abst.), 1, 103 : Quantitative spectroscopic examination of pure indigo (abst.), - - - 6, 97

WOLFF, N. Precipitation of manganese by air loaded with bromine vapor (abst.), 5, 244 : See also Weber, A.

WOLFRAM, G. Determination of theobromine in cocoa and chocolate (abst.), - - - - - 1, 365

WOLL, F. W. Recent progress in analysis of cattle foods - - - 16, 174

WOLLYN, R. Analytical operations and apparatus (abst.), - - - 7, 92, 180

WOOD, E. F. Modification of molybdate method of estimating phosphorus in steel (abst.), 7, 294 : Determination of phosphorus in iron and steel (abst.), - - - - - 9, 8

WOOD, J., and J. L. Borden. Action of ammonium hydrate on halogen salts of lead - - - - - 6, 218

WOODCOCK, R. C. Detection of alkaloids in food, etc. (abst.), - - - 4, 193

WOODMAN, A. G. Method for the differentiation of organic matter in water, 20, 497 : See also Talbot, H. P.

WOODMAN, D. Note on lead poisoning by carbonated beverages, 11, 99; Necessity for inspection of wells in cities and towns, 13, 44 : Three samples of crude petroleum, 13, 179 : An apparatus for heating sealed tubes, 13, 182 : Analyses of glass used in the manufacture of incandescent electric lamps, 14, 61 : Note on denitrification of pyroxylin, 14, 112 : Variations in the composition of red lead - - - - - 19, 339

WOODRUFF, E. C. Color reactions of nitric and chloric acids with certain aromatic bodies, - - - - - 19, 156

WOODWORTH, E. H. See Noyes, A. A.

WORINGER, L. Camphanic acid (abst.), - - - - - 7, 82

WORMLEY, T. G. Determination of urea in urine (abst.), - - - 4, 196

WRIGHT, C. R. A. On the manufacture of cuprammonium and zinc ammonium compounds, etc. (abst.), - - - - - 6, 139

WRIGHT, C. R. A., and A. E. Menke. Manganese dioxide (abst.), 2, 344

WRIGHT, C. R. A., and C. Thompson. Estimation of resin in soaps (abst.), - - - - - 8, 62

WRIGHT, H. E. See Stone, W. E.

WRIGHT, L. T. On hydrated ferric oxide, and its behavior with hydrogen sulphide (abst.), 5, 99 : Estimation of hydrogen sulphide and carbon dioxide in coal gas (abst.), 5, 112 : On gaseous fuel (abst.), 6, 26 : Influence of temperature of distillation on the composition of coal gas (abst.), 6, 105 : Illuminating power of methane (abst.), 7, 213 : Coal distillation (abst.), - - - - - 10, 45

WROBLEWSKY, E. Structural formulae of aromatic compounds (abst.), - - - - - 1, 169

WROBLEWSKI, S. VON. Composition of hydrated carbonic acid (abst.), 4, 236 : Liquefaction of hydrogen (abst.), 6, 157 : Use of boiling oxygen as a means of cooling, and solidification of nitrogen (abst.), 7, 27

WÜRTHNER, E. See Lellmann, E.

WURSTER, C. Oxidations by means of hydrogen dioxide (abst.), 9, 192 : See also Fittig, R.

WURTZ, A. Chloral hydrate (abst.), 1, 401 : Answer to remarks of Berthelot on chloral hydrate (abst.), 1, 403 : Action of ethylene chlorhydrin on pyridine bases and on quinoline (abst.), 4, 272 : Observations on Faraday's law, and on the law discovered by Bouthy (abst.), 6, 126 : Note on Faraday's law (abst.), - - - 6, 156

WYNKOOP, G. Sodium nitrite as a precipitant of the iron group in qualitative analysis, - - - - - 19, 434

WYROUBOFF, G. On Marcano's platinum sulphocyanate (abst.), 2, 430 : On the racemates of sodium and potassium (abst.), 8, 37 : An acid cerium sulphate (abst.), - - - - - 12, 70

YARDLEY, H. B. Note on Warington's modification of Kjeldahl's process (abst.), - - - - - 7, 291

YOCUM, J. H. See Alsop, W. K.

YOSHIDA, H. See Atkinson, R. W.

YOUNG, A. V. E. Apparatus for gas analysis (abst.), - - - - 1, 283, 373

YOUNG, S. α -ethylvalerolactone, α -ethyl- β -methylvalerolactone, and a decomposition of β -ethylacetosuccinic ester (abst.), 5, 100 : Test for gallic acid (abst.), 5, 245 : See also Ramsay, W.

YOUNG, S. W. Titration of stannous salts with iodine, 19, 809 : Solubility of stannous iodide in water and in solutions of hydriodic acid, 19, 845 : On iodostannous acid, - - - - - 19, 851

YOUNG, S. W., and M. Adams. Action of iodine on solutions of stannous chloride - - - - - 19, 515

YOUNG, S. W., and R. E. Swain. Volumetric determination of the nitro group in organic compounds, - - - - - 19, 812

YOUNG, W. C. Detection of alum in flour by the logwood test (abst.), 1, 566 : Alumina as a natural constituent of wheat flour (abst.), - - - - - 9, 169

YVON, P. Detection of fuchsine in wine (abst.), - - - - - 1, 575

ZARUDSKY, G. Determination of carbon in cast iron (abst.), - - - 6, 193

ZECCHIM, [M.] Distinction of olive and cotton-seed oils (abst.), 4, 192

ZECKENDORF, A. See Hantzsch, A.

ZEIDLER, O., and F. Zeidler. Action of oxidizing agents on the hydrocarbons of the olefine series (abst.), - - - - - 2, 185

ZENGER, V. See Brühl, J. W.

ZENTHER, A. Action of carbon monoxide on alkaline hydroxides at high temperatures (abst.), - - - - - 2, 367

ZERRENER, H. Microscopic examination of potable water (abst.), 1, 578

ZIMMERMANN, A. Liquid carbonic acid under regulated pressure (abst.), - - - - - 6, 25

ZIMMERMANN, C. Properties and atomic weight of uranium (abst.), 5, 25

ZIMMERMANN, J. Action of ethyl chloracetate on phenylenediamine (abst.), - - - - - 4, 267

ZIMMERMANN, J., and M. Knyrim. Action of ethyl chloracetate on primary diamines (abst.), - - - - - 5, 128

ZIMMERMANN, V., and A. Müller. *p*-Nitrobenzylidene chloride (abst.), - - - - - 8, 75
ZINCKE, T. Action of amines on quinones (abst.), - - - - 4, 226, 264
ZINCKE, T., and O. Kegel. Action of chlorine on phloroglucine (abst.), - - - - - 12, 159
ZÜBLIN, H. See Meyer, V.

INDEX OF NEW BOOKS.

ADAMS, C. F. Physical Laboratory Manual for Secondary Schools,	19, 354
ADRIANCE, J. S. Laboratory Calculations and Specific Gravity Tables,	19, 355
ALLEN, A. H. Commercial Organic Analysis. Vol. III, Part III.	
Vegetable Alkaloids (concluded),	19, 263
ALLEN, J. A. Tables for Iron Analysis,	19, 177
ALPERS, W. C. The Pharmacist at Work,	20, 144
ANDÉS, L. E. Animal Fats and Oils,	20, 550
AUSTEN, P. T. Notes for Chemical Students,	19, 438
BANCROFT, W. D. The Phase Rule,	19, 767
BÉHAL, A. <i>Traité de Chimie Organique d'après les Théories Modernes.</i> Vol. I, Aliphatic Compounds, 19, 437 : Vol. II, Carbocyclic Compounds,	19, 680
BENNETT, A. A. A Text-Book of Inorganic Chemistry,	17, 243
BERNTHSEN, A. A Text-Book of Organic Chemistry,	17, 500
BERTHELOT, M. <i>Essai de Mécanique Chimique Fondée sur la Thermochimie,</i>	2, 161
BISCHOFF, C. A. <i>Handbuch der Stereochemie,</i>	17, 497
BLOUNT, B., and A. G. Bloxam. Chemistry for Engineers and Manufacturers. Vol. I, Chemistry of Engineering, Building, and Metallurgy, 18, 745 : Chemistry for Engineers and Manufacturers. Vol. II, Chemistry of Manufacturing Processes,	19, 171
BOLTON, H. C. A Select Bibliography of Chemistry, 1492-1892,	15, 713
BORCHERS, W. Electric Smelting and Refining,	20, 156
BRUSH, G. J., and S. L. Penfield. Manual of Determinative Mineralogy, with an Introduction on Blowpipe Analysis,	18, 1109
CAIRNS, F. A. A Manual of Quantitative Chemical Analysis for the Use of Students,	19, 271
CALDWELL, G. C. Elements of Qualitative and Quantitative Chemical Analysis,	17, 419
CARNOT, A. <i>Traité d'Analyse des Substances Minérales,</i>	20, 891
CAVENDISH, HON. HENRY, F.R.S. Experiments on Air (Alembic Club reprint),	15, 664
CLARKE, F. W. The Constants of Nature. Part V.—A Recalculation of the Atomic Weights,	19, 177
CLASSEN, A. Quantitative Chemical Analysis by Electrolysis,	16, 877
CLASSEN, A., and W. Löb. Quantitative Chemical Analysis by Electrolysis,	20, 551
CLOWES, F. Elementary Qualitative Chemical Analysis,	17, 419
COMEY, A. M. A Dictionary of Chemical Solubilities,	20, 145
CONGDON, E. A. A Brief Course in Qualitative Analysis,	20, 889
CORNISH, V. Practical Proofs of Chemical Laws,	18, 99
CREMER, J. H., and G. A. Bicknell. A Chemical and Metallurgical Handbook,	16, 790

CROOKES, W. *Select Methods in Chemical Analysis, Chiefly Inorganic.* Third edition, - - - - - 16, 789

CURTMAN, C. O. *Lessons in Qualitative and Volumetric Chemical Analysis, etc.,* - - - - - 16, 873

CUSHMAN, A. S. *The Post-Mortem Detection and Estimation of Strychnine (Transactions, etc.),* - - - - - 16, 720

DALTON, JOHN, William Hyde Wollaston, M.D., Thomas Thomson, M.D. *Foundations of the Atomic Theory (Alembic Club Reprint)* 15, 544

DAVY, HUMPHRY. *The Decomposition of the Fixed Alkalies and Alkaline Earths (Alembic Club reprint),* 16, 717 : *The Elementary Nature of Chlorine (Alembic Club reprint),* - - - - - 17, 74

DAY, D. T. *Mineral Resources of the United States (1893),* - - - - - 16, 572

ELOART, A. *A Guide to Stereochemistry,* - - - - - 15, 480

EISSLER, M. *A Handbook of Modern Explosives,* - - - - - 20, 161

ELLIOTT, A. H. *A System of Instruction in Qualitative Chemical Analysis,* - - - - - 16, 429

EVANS, P. W. *An Introductory Course in Quantitative Analysis,* 20, 238

FARADAY, MICHAEL. *The Liquefaction of Gases (Alembic Club Rep't)* 18, 1110

FINK, E. *Précis d'Analyse Chimique,* - - - - - 19, 267

FLEISCHMANN, W. *The Book of the Dairy,* - - - - - 20, 157

FLETCHER, E. L. *Practical Instructions in Quantitative Assaying with the Blowpipe, etc.,* - - - - - 16, 571

FLUCKIGER, F. A. *Reactions. A Selection of Organic Preparations Important to Pharmacy,* - - - - - 15, 478

FRASER, P. *Tables for the Determination of Minerals by Physical Properties,* - - - - - 19, 353

FREER, P. C. *Descriptive Inorganic General Chemistry, 17, 152 : The Elements of Chemistry,* - - - - - 18, 1110

FRESENIUS, C. R. *Manual of Qualitative Chemical Analysis,* - - - - - 20, 142

FUERTES, J. H. *Water and Public Health,* - - - - - 20, 158

FURMAN, H. VAN F. *A Manual of Practical Assaying,* - - - - - 16, 142

GIBBS, W. E. *Lighting by Acetylene,* - - - - - 20, 895

GILL, A. H. *A Short Handbook of Oil Analysis,* - - - - - 20, 237

GRiffin, R. B., and A. D. Little. *The Chemistry of Paper-Making,* 16, 875

GROSSMANN, J. *Die Schmiermittel. Methoden zu ihrer Untersuchung und Werthbestimmung,* - - - - - 16, 69

HALLER, A. *Traité Élémentaire de Chimie,* - - - - - 19, 356

HARRIS, E. P. *A Manual of Qualitative Chemical Analysis,* - - - - - 17, 994

HELM, G. *The Principles of Mathematical Chemistry,* - - - - - 20, 154

HOFF, J. H. VAN'T. *Studies in Chemical Dynamics, 19, 268 : The Arrangement of Atoms in Space,* - - - - - 20, 386

HOWE, J. L. *Bibliography of the Platinum Group,* - - - - - 20, 387

HURST, G. E. *Soaps,* - - - - - 20, 989

JONES, H. C. *The Freezing-Point, Boiling-Point, and Conductivity Methods,* - - - - - 20, 317

KRISER, E. H. *Laboratory Work in Chemistry,* - - - - - 17, 996

LADD, E. F. *A Manual of Quantitative Chemical Analysis,* - - - - - 20, 552

LANDAUER, J. *Spectrum Analysis,* - - - - - 20, 383

LANDOLT, H. Das optische Drehungsvermögen organischer Substanzen und dessen praktische Anwendung, - - - - - 20, 381

LEEFFMANN, H., and W. Beam. Analysis of Milk and Milk Products, 15, 596

LOEW, O. The Energy of Living Protoplasm, - - - - - 19, 349

LONG, J. H. Laboratory Manual of Elementary Chemical Physiology and Urine Analysis, 16, 874 : An Elementary Course in Experimental and Analytical Chemistry, 17, 744 : A Text-Book of Elementary Analytical Chemistry, - - - - - 20, 893

LÜPKE, R. Elements of Electrochemistry, - - - - - 20, 142

MCNEAL, F. B. Eighth Annual Report of the Dairy and Food Commissioner of Ohio, - - - - - 17, 333

MANDEL, J. A. Handbook for the Bio-Chemical Laboratory, - - - - - 19, 357

MASON, W. P. Water Supply (Considered Principally from a Sanitary Standpoint), - - - - - 18, 562

MEDICUS, L. Introduction to Qualitative Analysis, - - - - - 19, 265

MENDELÉEFF, D. The Principles of Chemistry, - - - - - 20, 148

MENSCHUTKIN, N. Analytical Chemistry, - - - - - 18, 190

MÖLLER, F. P. Cod-Liver Oil and Chemistry, - - - - - 17, 584

MORGAN, J. L. R. An Outline of the Theory of Solution and its Results, - - - - - 20, 153

MORLEY, E. W. On the Densities of Oxygen and Hydrogen, and on the Ratio of their Atomic Weights, - - - - - 18, 192

MOSES, A. J., and C. L. Parsons. Elements of Mineralogy, Crystallography, and Blowpipe Analysis, - - - - - 17, 745

MUIR, M. M. P. The Alchemical Essence and the Chemical Element. An Episode in the Quest of the Unchanging, 16, 575 : Tables and Directions for Qualitative Chemical Analysis, - - - - - 18, 1110

MURRILL, P. I. Alkaloidal Estimation ; A Bibliographical Index, 20, 890

NEWTH, G. S. A Text-Book of Inorganic Chemistry, - - - - - 17, 71

NOYES, A. A. A Detailed Course of Qualitative Analysis, - - - - - 16, 503

NOYES, A. A., and S. P. Mulliken. Laboratory Experiments on the Class Reactions and Identification of Organic Substances, - - - - - 20, 319

NOYES, W. A. Organic Chemistry for the Laboratory, - - - - - 20, 240

OETTEL, F. Introduction to Electrochemical Experiments, 20, 317 : Practical Exercises in Electrochemistry, - - - - - 20, 318

ORNDORFF, W. R. A Laboratory Manual Containing Directions for a Course of Experiments in Organic Chemistry, - - - - - 15, 418

OSTWALD, W. The Scientific Foundations of Analytical Chemistry, 18, 98

PALAZ, A. A Treatise on Industrial Photometry, with Special Application to Electric Lighting, - - - - - 17, 151

PARNICKE, A. Die Maschinellen Hilfsmittel der chemischen Technik, - - - - - 17, 74

PASTEUR, LOUIS. Researches on the Molecular Asymmetry of Natural Organic Products (Alembic Club reprint), - - - - - 20, 235

PHILLIPS, F. C. Researches upon the Phenomena of Oxidation and Chemical Properties of Gases, - - - - - 15, 292

POOLE, H. The Calorific Power of Fuels, - - - - - 20, 388

PRIESTLEY, JOSEPH, and Carl Wilhelm Scheele. *The Discovery of Oxygen* (Alembic Club reprint), - - - - - 16, 718

PUPIN, M. I. *Thermodynamics of Reversible Cycles in Gases and Saturated Vapors*, - - - - - 16, 430

REDWOOD, I. I. *A Practical Treatise on Mineral Oils and Their By-Products*, - - - - - 20, 236

REV, JEAN. *The Increase in Weight of Tin and Lead on Calcination* (Alembic Club reprint), - - - - - 17, 585

RICHARDSON, G. M. *Laboratory Manual and Principles of Chemistry for Beginners*, - - - - - 16, 879

RICKETTS, P. DE P. *Notes on Assaying*, - - - - - 19, 356

ROSCOE, SIR H. E. *John Dalton and the Rise of Modern Chemistry*, 17, 658

RUDDIMAN, E. A. *Incompatibilities in Prescriptions; etc.*, - - - - - 20, 151

SADTLER, S. P. *A Hand-Book of Industrial Organic Chemistry*, 17, 914

SADTLER, S. P., and H. Trimble. *A Text-Book of Chemistry Intended for the Use of Pharmaceutical and Medical Students*, - - - - - 17, 656

SANFORD, P. G. *Nitro-Explosives*, - - - - - 19, 178

SAANGER, C. R. *Experiments in General Chemistry and Qualitative Analysis*, 18, 747: *Laboratory Experiments in General Chemistry*, 18, 747

SCHEELE, CARL WILHELM, and others. *The Early History of Chlorine* (Alembic Club reprint), - - - - - 20, 152

SCHIMPF, H. W. *A Text-Book of Volumetric Analysis*, - - - - - 17, 69

SCHRAUB, F. C. *First Annual Report of the Commissioner of Agriculture of New York*, - - - - - 17, 333

SEYMORE, P. H. *Bibliography of Aceto-Acetic Ester and Its Derivatives*, - - - - - 17, 332

SHENSTONE, W. A. *Justus von Liebig: His Life and Work*, - - - - - 17, 833

SIMON, W. *Manual of Chemistry*, - - - - - 17, 501

SMITH, E. F. *Electro-Chemical Analysis*, - - - - - 16, 574

SNYDER, H. *The Chemistry of Dairying*, - - - - - 19, 175

SPENCER, G. L. *A Hand-Book for Chemists of Beet-sugar Houses and Seed-Culture Farms*, - - - - - 20, 236

SPEYERS, C. *Text-Book of Physical Chemistry*, - - - - - 20, 389

STETTENHEIMER, L. *Kräfte der chemischen Dynamik*, - - - - - 17, 336

STILLMAN, T. B. *Engineering Chemistry: Quantitative Analysis*, 19, 272

STORER, F. H., and W. B. Lindsay. *An Elementary Manual of Chemistry*, - - - - - 16, 644

TALBOT, H. P. *Introductory Course of Quantitative Chemical Analysis*, - - - - - 19, 355

TILDEN, W. A. *Hints on the Teaching of Elementary Chemistry in Schools and Science Classes*, - - - - - 18, 563

THOMPSON, E. P. *Roentgen Rays and Phenomena of the Anode and Cathode. Concluding Chapter by W. A. Anthony*, - - - - - 19, 175

THORP, F. H. *Inorganic Chemical Preparations*, - - - - - 19, 178

THORPE, T. E. *Humphry Davy, Poet and Philosopher*, - - - - - 20, 160

THRELFALL, R. *On Laboratory Arts*, - - - - - 20, 384

THRESH, J. C. *Water Analysis, Especially Designed for the Use of Medical Officers of Health*, - - - - - 19, 180

TRIMBLE, H. *The Tannins. A Monograph on the History, Preparation, Properties, Methods of Estimation, and Uses, etc.*, Vol. II, 16, 428

VENABLE, F. P. *A Short History of Chemistry*, 16, 876 : The Development of the Periodic Law, - - - - - 19, 173

WALLER, A. D. *Exercises in Practical Physiology : Part III.—Physiology of the Nervous System, Electro-Physiology*, - - - - - 20, 238

WEDDERBURN, A. J. *A Compilation of the Pharmacy and Drug Laws of the Several States and Territories*, 17, 333 : Report on the Extent and Character of Food and Drug Adulteration, - - - - - 17, 333

WELLS, H. L. *A Laboratory Guide in Qualitative Chemical Analysis*, 20, 728

WELLS, J. S. C. *A Short Course in Inorganic Qualitative Analysis for Engineering Students*, - - - - - 20, 896

WHITELEY, R. L. *Organic Chemistry*, - - - - - 18, 99

WIECHMANN, F. G. *Lecture Notes on Theoretical Chemistry*, 15, 119: Lecture Notes on Theoretical Chemistry. Second Edition, - - - - - 19, 266

WILEY, H. W. *Proceedings of the Eleventh Annual Convention of the Association of Official Agricultural Chemists*, 17, 330 : Principles and Practice of Agricultural Analysis. Vol. I, 17, 912 ; Vol. II, 17, 995 ; Vol. III, - - - - - 19, 269

WILLARD, J. T. *An Introduction to the Organic Compounds of Every-Day Life*, - - - - - 16, 502

WILLIAMS, R. P. *Elements of Chemistry*, - - - - - 20, 159

WILSON, E. B. *The Chlorination Process*, - - - - - 20, 239

WISER, J. P. *Explosive Materials*, - - - - - 20, 813

WURTZ, C. A., W. H. Greene, and H. F. Keller. *Elements of Modern Chemistry*, - - - - - 17, 832

Agricultural Experiment Station of Nebraska, *Seventh Annual Report (1893)*, - - - - - 16, 573

Georgetown College, *Qualitative Chemical Analysis of Inorganic Substances as Practiced in* - - - - - 17, 245

Methods for the Analysis of Ores, Pig Iron, and Steel, - - - - - 20, 389

Pharmacopoeia of the United States of America (1890), - - - - - 15, 418

Select Tables from the U. S. Pharmacopoeia (1890), - - - - - 16, 430

U. S. Department of Agriculture. *The Cotton Plant—Its History, Botany, Chemistry, Culture, Enemies, and Uses*, - - - - - 19, 181

INDEX OF OBITUARIES.

ALSBERG, DR. MEINHARD,	-	-	-	-	-	19, 954
CASAMAJOR, PAUL,	-	-	-	-	-	9, 206
CHEVREUL, MICHEL EUGÈNE,	-	-	-	-	-	11, 71
COLBY, CHARLES EDWARDS,	-	-	-	-	-	20, 139
COLLIER, PETER, PH.D.,	-	-	-	-	-	18, 748
DOUGLAS, SILAS H.,	-	-	-	-	-	12, 306
GOLDMARK, JOSEPH,	-	-	-	-	-	4, 7
HAVEMEYER, THEODORE A.,	-	-	-	-	-	19, 588
KÉKULÉ, PROFESSOR AUGUST,	-	-	-	-	-	18, 1107
KRÜSS, GERHARD,	-	-	-	-	-	17, 423
McCLURE, PROFESSOR EDGAR,	-	-	-	-	-	19, 767
MACINTOSH, JAMES BUCKTON,	-	-	-	-	-	13, 153
MEYER, LOTHAR VON,	-	-	-	-	-	17, 664
MEYER, VICTOR,	-	-	-	-	-	19, 918
MOORE, DR. GIDEON E.,	-	-	-	-	-	17, 659
MOTAY, CYPRIEN M. TESSIÉ DU,	-	-	-	-	-	2, 305
MOTT, DR. HENRY A.,	-	-	-	-	-	19, 90
NASON, HENRY BRADFORD,	-	-	-	-	-	17, 339
NORTON, PROFESSOR LEWIS MILLS,	-	-	-	-	-	15, 54, 241
PASTEUR, a tribute to,	-	-	-	-	-	17, 1000
PÉLIGOT, EUGÈNE MELCHIOR,	-	-	-	-	-	12, 128
POWERS, PROFESSOR MARK,	-	-	-	-	-	17, 586
RUPP, WILLIAM,	-	-	-	-	-	13, 71
SCHULTZ, CARL H.,	-	-	-	-	-	19, 676
SMITH, JOHN LAWRENCE,	-	-	-	-	-	5, 228
STAS, JEAN SERVAIS,	-	-	-	-	-	14, 173
WORMLEY, PROFESSOR THEODORE GEORGE,	-	-	-	-	-	19, 275

INDEX OF SUBJECTS.

Abbreviations of titles of chemical journals, - - - - - 10, 152
 Absorbent blocks, - - - - - 17, 472
 Absorption pipette for gas analysis, - - - - - 18, 67
 Accuracy, actual, of chemical analyses, 18, 808 : of commercial silver assay, 16, 505 : of metallurgical analyses, probable limits of, - - - - - 18, 35
 Acenaphthene, heat of solution of, - - - - - 18, 151
 Acetal, new method for making (abst.), - - - - - 2, 432
 Acetaldehyde, action of, on resorcinol (abst.), - - - - - 9, 34
 Acetamide, heat of solution of, in water and in alcohol, - - - - - 18, 156
 Acetamide, ethyl-, halogen derivatives of, - - - - - P. 2, 115
 Acetanilide, heat of solution of, 18, 152 : identification of, 17, 933 : qualitative examination of, - - - - - 18, 142
 Acetanilide, *p*-amido-, and some new azo compounds (abst.), 7, 55 : brom-, synthesis of indigo from (abst.), - - - - - 12, 163
 Acetate, calcium, manufacture and analysis of, 4, 94 : ethyl, preparation of (abst.), 2, 366 : uranium, as a reagent for albuminoids (abst.), - - - - - 7, 291
 Acetate, chlor-, amyl, (abst.), 8, 74 : chlor-, butyl, and butyl dichlor- (abst.), 8, 180 : chlor-, ethyl, action of, on phenylenediamine (abst.), 4, 267 : chlor-, ethyl, action of, on primary diamines (abst.), 5, 128 : benzalaceto-, ethyl, action of, on phenylhydrazine (abst.), - - - - - 8, 55
 Acetbenzalacetic ester : see benzalacetooacetic ester.
 Acetic acid, action of, on French oil of turpentine (abst.), 8, 71 : determination of, in crude calcium acetate (abst.), 1, 367, 582 ; determination of, in vinegar, 17, 741, 834 : determination of, in wine (abst.), 1, 364 : fluidity of anhydrous and diluted (abst.), 8, 229 : mixture of, with benzene does not separate in layers, 17, 932 : new compounds of, with ammonia (abst.), 4, 234 : solubility of sulphur in (abst.), 1, 99 : use of, in milk analysis, - - - - - 8, 205
 Acetic acid, allyl-, behavior of, with sodium hydroxide, 17, 1 : bromodichlor- (abst.), 4, 269 : chlordibrom- (abst.), 4, 269 : diallyl-, action of hydrobromic acid and bromine on, 4, 271 : dichlor-, and *p*-toluidine, formation of *p*-toluyl-*p*-methylimisatin from (abst.), 7, 205 : diphenyl-, synthesis of (abst.), 2, 436 : heptyl-, and heptylmalonic acid, 5, 10 : *p*-nitrobenzoyl- (abst.), 7, 31 : phenoxy- (abst.), - - - - - 2, 292
 Acetic anhydride, action of, on pyrrol (abst.), - - - - - 7, 84
 Acetoacetate, ethyl, action of chlor- and bromacetone, acetophenone bromide, and phenylbromacetic acid on (abst.), 6, 85 : condensation product of phenanthraquinone with (abst.), - - - - - 5, 92
 Acetobenzoic anhydride (abst.), - - - - - 2, 431
 Acetone from acetic acid, 18, 231 : action of allyl iodide, butyl iodide, and zinc upon (abst.), 7, 58 : action of aluminum chloride upon

(abst.), 5, 117 : action of boron fluoride upon (abst.), 1, 400 : action of, on phenanthraquinone (abst.), 4, 221 : condensation of (abst.), 4, 268 : contraction of aqueous solutions of, 16, 618 : detection of (abst.), 8, 24 : determination of, in wood spirit (abst.), 4, 196 : diethoxy- (abst.), 10, 188 : improvement in the manufacture of, 17, 187 : improvements on Squibb's method for estimating, 19, 316 : literature of estimation of, 19, 319 : in methyl alcohol (abst.), 10, 195 : table of specific gravity for aqueous, 17, 200 : volumetric determination of, 18, 1068 : use of, as solvent in the preparation of tannins, - - - - - 15, 344.

Acetone, acetyl-, derivatives of (abst.), 9, 171 : acetyl-, homologues of (abst.), 10, 14 : diethoxy-, - - - - - 10, 188

Acetone and chloroform, acid obtained by action of alcoholic potassium hydroxide on (abst.), - - - - - 9, 102

Acetonitrile, preparation of (abst.), - - - - - 2, 432

Acetonitrile, dichlor-, a polymeric (abst.), 7, 177 : ethoxy-, - - P. 2, 124

Acetonylacetone (abst.), - - - - - 7, 147

Acetophenone bromide, action of, on ethyl acetoacetate (abst.), - - 6, 85

Acetophenones, brom-, action of amides on (abst.), - - - - - 9, 195

Acetyl chloride, action of, on benzaldehyde in the presence of zinc dust (abst.), 5, 132 : action of, on fumaric acid (abst.), 4, 221 : compound of, with titanium tetrachloride (abst.), 2, 430 : and glacial acetic acid, action of, on fumaric acid (abst.), - - - - - 5, 18

Acetyl compounds of carbohydrates (abst.), - - - - - 2, 225

Acetyl, determination of, by means of magnesia (abst.), - - - - - 1, 547

Acetylacetone, derivatives of (abst.), 9, 171 : formation of (abst.), 9, 172 : homologues of (abst.), - - - - - 10, 14

Acetylidiphenylamine, action of phosphorus pentachloride on (abst.), 4, 264

Acetylene, formation of, from iodof orm (abst.), 6, 37 : halogen compounds of (abst.), 5, 29, 58 : heat of combustion of (abst.), 4, 229 : illumination with, for polariscope, - - - - - 18, 179

Acetylene hydrocarbon, caprylidene (abst.), 9, 6 : hydrocarbons, silver nitrate as a reagent for (abst.), - - - - - 10, 87

Acetylphenyllactic acid, behavior of (abst.), - - - - - 7, 143

Acid, free, in tan liquors, titration of (abst.), 1, 367 : new, isomeric with itaconic acid (abst.), - - - - - 5, 124

Acid residues from the manufacture of gun-cotton, regeneration of (abst.), - - - - - 9, 38

Acidimetry and alkalimetry, - - - - - 12, 131

Acidity in soils, the relative sensibility of plants to, - - - - - 20, 103

Acids, antiseptic action of (abst.), 1, 496 : aromatic, action of iodine on silver salts of (abst.), 4, 264 : aromatic, action of nitrous anhydride on, 12, 55 : aromatic amido- (abst.), 2, 370 : complex, containing boric acid (abst.), 2, 434 : complex inorganic (abst.), 1, 111, 482 : haloid, action of, on hydrocyanic acid (abst.), 4, 221 : monobasic organic, amidines and thiamides of (abst.), 2, 188 :

monobasic organic, double chemical function of (abst.), 1, 489 : organic, halogenized and hydroxylized (abst.), 4, 175 : solubility of salts of weak, in stronger acids, 20, 742 : solubility of, in solutions of salts of other acids, 20, 751 : unsaturated aromatic (abst.), 1, 242 : unsaturated monobasic, etherification of (abst.), 2, 172 : unsaturated, researches upon (abst.), 1, 236 : weak, reagent to detect acid nature of (abst.), 8, 79 : weak, reciprocal displacement of (abst.), 1, 279

Acids, fatty, action of superheated steam upon (abst.), 1, 403 : boiling-points and specific volumes of the esters of (abst.), 8, 228 : decomposition of, by heat (abst.), 8, 25 : and their derivatives, heats of combustion of (abst.), 8, 183 : determination of, in butter, 16, 673 : determination of freezing-point of, 16, 665 : determination of, in oils (abst.), 6, 100 : determination of the points of fusion and solidification of (abst.), 8, 65 : heat of combustion of (abst.), 8, 83 : in oils (abst.), 11, 55 : oxidation of (abst.), 8, 184 : products of the dry distillation of the silver salts of (abst.), 8, 64 : separation of solid and liquid, 17, 289, 740 : thermochemical relations of (abst.), 8, 82 : toxic effects of (abst.), 8, 229 : volatile, occurrence of, in urine (abst.), 8, 86

Acids and alcohols of aliphatic series, thermochemical relations of (abst.), 8, 82

Aconitates (abst.), 4, 231

Aconitic acid, occurrence of, in cane juice and raw sugar, P. 1, 220

Acridine (abst.), 2, 98 : production of (abst.), 6, 86

Acridine picrate (abst.), 7, 84

Acridity in plants, cause of, 13, 215

Acrolein, action of, on xylidine, 5, 1

Acrolein, diphenylamine-, 4, 32

Acrolein-urea, 4, 58 : with remarks upon Schiff's publications upon condensed ureas, 5, 36

Acrylic acid, dichlor-, decomposition of, by alkalies (abst.), 1, 163 : β -dipropyl-, from β -dipropylethylenealactic acid (abst.), 7, 83 : ethoxy-, from α -dichlorpropionic acid (abst.), 12, 227

Actinometry, new method in, 2, 249

Adams and Wanklyn method for estimating fat in milk, 12, 488

Adenine and hypoxanthine (abst.), 12, 161

Adipic acid, dichlor-, preparation from α -dichlorpropionic acid (abst.), 8, 35 : dichlor-, properties of (abst.), 8, 36

Adulteration of food, drink, drugs, etc., 3, 60

Affinity, chemical (abst.), 1, 295 : chemical, methods of estimating (abst.), 1, 497 : relative, of oxygen, sulphur, and the halogens, for hydrogen (abst.), 1, 385

Affinities, relative, of oxygen and the halogens (abst.), 1, 280

Agricultural chemistry, notable events in the progress in, 14, 83

Agricultural Chemists, Official, meeting of, 16, 431

Agriculture, application of ferrous sulphate in (abst.), 7, 54

Air, apparatus for determination of oxygen in (abst.), 1, 585 : determinations of free and albuminoid ammonia, and of ozone, during epidemic of yellow fever, 1, 263 : determination of moisture in (abst.), 2, 171 : hygienic analysis of (abst.), 9, 219 : impurities in, in Cleveland, 17, 105 : presence of nitrous acid in (abst.), - 12, 69

Air-bath, a modified, 20, 271 : new form of, - - - - - 16, 31

Air-pump, Sprengel, on the development of (abst.), - - - - - 6, 97

Air-thermometer, new form of, for technical purposes, - - - - - 12, 277

Albinism, vegetable, chemical study of (abst.), - - - - - 2, 342

Albumin in acid urine, precipitation of (abst.), 1, 348 : detection of small quantities of (abst.), 9, 37 : determination of, according to Millon and Commaille (abst.), 9, 47 : determination of, in bacterial urine (abst.), 12, 415 : determination of, in cow's milk, 16, 712 : determination of sulphur in (abst.), 12, 176 : determination of, in urine (abst.), 10, 197 : egg, on the coagulation of (abst.), 8, 73 : formation of urea from (abst.), 12, 475 : influence of carbohydrates and fatty bodies on the putrefaction of (abst.), 8, 230 : products formed by the putrefaction of (abst.), 2, 174 : separation of, from peptone (abst.), 10, 157 : test for (abst.), - - - - - 12, 415

Albumin compounds, crystalline, preparation of (abst.), - - - - - 1, 494

Albuminoid matter in plants, relation of, to the formation of oxalic acid (abst.), 9, 7 : nitrogen, sources of error in determining, 18, 464 : substances (abst.), - - - - - 6, 95

Albuminoids (abst.), 2, 225 : determination of, in food for cattle (abst.), 1, 565 : influence of tartrates and lactates on the digestion of, 12, 394 : of maize, 14, 313 : in pumpkin seeds, decomposition of (abst.), 2, 136 : uranium acetate as a reagent for (abst.), - - - - - 7, 291

Alchemical chart, - - - - - 13, 293

Alchemical medals, exhibition of, - - - - - 13, 33

Alcohol, absolute, 15, 126 : action of chloride of lime upon (abst.), 1, 496 : action of, on diazo-compounds (abst.), 7, 148 : alleged tests for (abst.), 5, 233 : allyl, formation of (abst.), 9, 100 : Bang's process for detection of impurities of (abst.), 10, 27 : detection of, in essential oils and chloroform (abst.), 1, 582 : detection and estimation of small quantities (abst.), 1, 574 : detection of traces of water in, 1, 38 : determination of, with cobalt sulphocyanate, 2, 340 : determination of, in fermented liquors (abst.), 1, 572, 573 : determination of small quantities of, 20, 293 : diatomic, derived from β -naphthol (abst.), 4, 77 : examination of (abst.), 12, 118, 119 : mercuric nitrate as a reagent for (abst.), 1, 339 : note on the purification of, 11, 124 : *in statu nascendi*, P. 1, 173 : untaxed, for use in the arts, 18, 1106 : use of fluorides in manufacture of, - - - - - 14, 212

Alcohol lamp with constant level (abst.), - - - - - 6, 99

Alcohols, aluminum (abst.), 4, 142 : compounds of, with lithium and magnesium chlorides (abst.), 2, 135 : esterification of, influence of structure and molecular weight upon (abst.), 1, 256 : of fusel oil, 14, 45 : higher, and hydrocarbons, obtained from American petro-

leum (abst.), 6, 95 : polyhydric, synthesis of (abst.), 9, 171 ; 15, 704 : synthesis of, in the pyridine series (abst.), - - - 12, 160

Alcohols and acids of aliphatic series, thermochemical relations of (abst.), - - - - - 8, 82

Alcohololate of potassium hydroxide (abst.), - - - - - 8, 273

Alcohol radicals, action of chlorine on the sulphides of (abst.), 10, 16 : action of water on haloid compounds of (abst.), - - - - 2, 65

Aldehyde, action of *p*-amidodimethylaniline on (abst.), 7, 230 : ammoniacal alkaline silver solution as reagent for (abst.), 5, 50 : glyceric (abst.), - - - - - 9, 101

Aldehyde-ammonia, hydrazine from (abst.), - - - - - 12, 165

Aldehyde and ammonia reaction for determining constitution of quinones (abst.), - - - - - 4, 199

Aldehyde phenols, action of acetic anhydride on (abst.), - - - 2, 130

Aldehydes, action of, on phenanthraquinone (abst.), 4, 198 : chlorinated, action of, on benzene (abst.), 6, 165 : combination of glycol with (abst.), 9, 172 : condensation of compounds containing the dicarbonyl group with (abst.), 5, 101 : condensation products of, with ethyl acetoacetate, etc. (abst.), 5, 101 : of the hydrocinnamic acid series (abst.), 12, 231 : reactions of (abst.), - - - 5, 239

Aldehydes and ammonia, action of, on benzil (abst.), 7, 31 : and glycols, combinations of (abst.), - - - - - 10, 18

Aliphatic series, constitution of nitro-compounds of (abst.), 8, 202 : nitro-compounds of (abst.), 8, 274 : properties of urethanes of, 8, 166 : synthesis in, by means of aluminum chloride (abst.), - - 9, 172

Alizarin, detection of (abst.), 2, 95 : determination of (abst.), - - 2, 95

Alizarin, β -amido- (abst.), - - - - - 7, 229

Alizarin blue, soluble (abst.), 5, 51 : orange, preparation of (abst.), 5, 20

Alkali, caustic, determination of, in presence of carbonate (abst.), 4, 165 : 10, 181 : determination of, in silver nitrate (abst.), - - 4, 165

Alkali metals, estimation of, in silicates (abst.), 6, 312 : reduction of compounds of, by magnesium (abst.), 12, 152 : vapor-densities of (abst.), - - - - - 2, 371

Alkali process, new (abst.), 10, 183 : waste, recovery of sulphur from (abst.), - - - - - 10, 90

Alkalies, determination of, in ash of plants (abst.), 1, 357 : determination of, in insoluble silicates, 12, 138 : determination of, in silicates (abst.), - - - - - 1, 334, 536

Alkalimetry, new indicator for (abst.), 4, 166 : and acidimetry, - - 12, 131

Alkaline earths, volumetric determination of (abst.), 7, 251 : hydroxides (abst.), 7, 283 : nitrates, combination of silver nitrate with (abst.), 8, 50 : sulphides, action of nitrates on (abst.), - - 6, 142

Alkaloid, a new, from cinchona bark (abst.), 4, 168 : a new volatile (abst.), - - - - - 1, 286

Alkaloids, absorption spectra of (abst.), 6, 309 : accompanying cocaine, isocinnamic acid present in (abst.), 12, 161 : artificial (abst.), 2, 99 : chemistry of lesser-known (abst.), 1, 553 : chem-

istry of nitrogen as disclosed in the constitution of, 9, 128 : color-reactions for (abst.), 4, 193 : color-reactions of, with antimony and bismuth trichlorides (abst.), 1, 544 : detection of, in food, etc., (abst.), 4, 193 : determination of, in cinchona bark (abst.), 1, 552; 4, 193 : determination of, in plants (abst.), 1, 548 : extraction of, from cinchona bark (abst.), 4, 192 : found in the human cadaver (abst.), 1, 554 : nature and properties of (abst.), 8, 23 : of *nux vomica* (abst.), 7, 116 : of opium, separation of (abst.), 9, 276 : of opium, solubility of (abst.), 9, 216 : perchloric acid as a reagent for (abst.), 1, 545 : periodides of, 20, 706 : presence of, in old flours (abst.), 8, 167 : of quinine group, polarized light for examination of, P, 2, 57 : of quinine group, pyridinetricarboxylic acid from (abst.), 2, 172 : *sabadilla*, 14, 226 : synthesis of (abst.), 7, 78 : vegetable, acidimetric estimation of, 17, 822 : volumetric estimation of, as periodides, - - - - - 20, 706

Alkaloidal extracts, separation of, 18, 1104 : salts, nomenclature and notation of, - - - - - 11, 130

Alkyl chlorides, action of, on ammonia and on methylamines (abst.), 8, 95 : disulphoxides, synthesis of so-called (abst.), 4, 176 : haloid salts and quinoline, bases resulting from addition of (abst.), 4, 265 : iodides, note on, - - - - - 13, 144

Alkylation of amides (abst.), - - - - - 12, 159

Alkylsulphonated fatty acids, formation of sulphones from (abst.), 7, 203

Allantoxanic acid, structure of (abst.), - - - - - 6, 135

Alloxan series, uric acid derivatives of, syntheses of (abst.), - - 1, 172, 275

Alloys, apparatus for determination of melting-point of (abst.), 4, 263 : explosive, of zinc with platinum metals (abst.), 4, 240 : formation of, by pressure (abst.), - - - - - 4, 269

Alloys and metal work, ancient, composition of (abst.), - - - - - 4, 171

Alloys of aluminum (gold, silver, nickel), 16, 485 : of lead and tin, blow-pipe reactions with, P, 2, 108 : of lead and tin, and lead and antimony, commercial valuation of 16, 541 : of iron with molybdenum, tungsten and chromium, as solutions, 16, 735 : of tungsten, determination of tungsten in (abst.), - - - - - 11, 53

Allyl alcohol, formation of (abst.), 9, 100 : alcohol, chlor-, and some of its derivatives (abst.), 5, 119 : iodide, action on phenol in the presence of lime or aluminum foil (abst.), 5, 234 : iodide, preparation of (abst.), 9, 100 : iodide, butyl iodide, and zinc, action of, on acetone (abst.), 7, 58 : sulphocyanate, aromatic bases isomeric with (abst.), - - - - - 2, 93

Allylacetic acid, behavior with boiling sodium hydroxide solution, - - 17, 1

Allylanisoil, derivatives of (abst.), - - - - - 2, 171

Allyldiethylcarbinol (abst.), 2, 54 : hydrocarbon obtained from (abst.), 7, 60

Allyldimethylcarbinol, coefficient of refraction of hydrocarbon from (abst.), - - - - - 7, 85

Allyldiisopropylcarbinol (abst.), - - - - - 2, 54

Allylene, action of mercuric oxide on (abst.), - - - - - 6, 167

Allylmalonic acid, action of bromine on (abst.), 4, 271 : behavior of, with boiling sodium hydroxide solution, - - - - - 17, 1
 Allylsuccinic acid and a carboxycaprolactonic acid (abst.), - - - - - 5, 69
 Allylsulphuric acid and some of its salts (abst.), - - - - - 7, 208
 Almond oil, unreliability of test for (abst.), - - - - - 8, 87
 Almonds, proteids of, - - - - - 18, 610
 Alum, ammonia, fractional dehydration of, etc., 4, 180 : clarification of water by (abst.), 7, 200 : cubic (abst.), 2, 370 : detection of, in bread (abst.), 4, 188 : detection of, in flour (abst.), 1, 566 : influence of, on digestion, - - - - - 16, 587
 Alum baking powders, influence of, on digestion, etc. (abst.), - - - - - 10, 171
 Alum phosphate baking powders, - - - - - 12, 452
 Alums, chrome, accommodation of (abst.), 2, 370 : examination of the formation of, by the differential dilatometer (abst.), 7, 77 : expansion of (abst.), 5, 27 ; 7, 77 : formation of, by electrolysis, 20, 759 : precipitation of, by sodium carbonate (abst.), 4, 258 : water of combination of (abst.), - - - - - 8, 272 ; 9, 100
 Alumina, amount of, in pure flour (abst.), 1, 110 : determination of, in phosphates, 17, 260 : as a natural constituent of wheat flour (abst.), - - - - - 9, 169
 Alumina residues from baking powders, solubility of, in gastric juice, 9, 27
 Alumina and silica in pure wheat, relation between amounts of (abst.), 1, 110
 Aluminates of potassium and sodium in solution, - - - - - 2, 27
 Aluminous mineral species, evigtokite and liskeardite (abst.), - - - - - 5, 97
 Aluminum, 15, 221, 276 : action of nitric acid upon, 19, 711 : alloys of, with gold and silver, 16, 485 : analysis of, 18, 766 : atomic weight of (abst.), 1, 277, 321 ; 20, 164 : determination of (abst.), 7, 296 : determination of, in alloys, 18, 772 : determination of, in the presence of iron and phosphoric acid (abst.), 10, 66 : as an electrode, 20, 302 : notes on, 16, 485 : pure metallic, properties of, 4, 145 : separation of, from iron, 17, 931 : (abst.), 7, 124 : separation of, from manganese (abst.), 1, 325 : separation of, from manganese, zinc, cobalt and nickel (abst.), 1, 529 : solder for, 16, 881 : use of, for condensers, 19, 153 : valence of, - - - - - 4, 180
 Aluminum alcohols, products of decomposition of, by heat (abst.), 4, 142 : basic sulphate, remarks about, 16, 153 : chloride, action of, on bromobenzene (abst.), 4, 174 : chloride, action of, on the halides of naphthol (abst.), 8, 94 : chloride, decomposing action exercised by, on certain hydrocarbons (abst.), 7, 142 : chloride, decompositions produced by action of (abst.), 4, 170 : chloride, new reaction of (abst.), 9, 172 : chloride and bromide, reactions in the presence of (abst.), 2, 172 : hydroxide, behavior of hydrogen sulphide towards alkaline solutions of (abst.), 1, 163, 334 : hydroxide, influence of, on digestion, 16, 857 : hydroxide as a precipitant for suspended clay, 13, 100 : oxychlorides (abst.), 7, 284 : phosphate, decomposition of, at high temperatures (abst.), 5, 119 : salts, effects of, on gastric juice in digestion, - - - - - 2, 13

Aluminum and iron, salts of, useful in dyeing (abst.) - - - - - 6, 172
 Alunite (abst.) - - - - - 5, 117
 Amalgams of chromium, iron, cobalt, nickel, and manganese (abst.)
 1, 276 : of iron, etc., - - - - - P. 1, 49
 Amandin, a proteid of the almond and the peach, - - - - - 18, 610
 Amarine and lophine, constitution of (abst.) - - - - - 4, 225
 Amber cane, Minnesota early, examination of - - - - - 1, 44
 American Chemical Society, organization of - - - - - P. 1, 3, 18
 American chemical societies, early, - - - - - 19, 717
 American chemist, the (presidential address), - - - - - 14, 331
 Amide of the sugar cane, additional notes on, - - - - - 20, 133
 Amides, action of bromine on (abst.), 5, 21 : action of, on bromacetophenones (abst.), 9, 195 : alkylation of (abst.), 12, 159: aromatic, direct conversion of, into azo-compounds, 3, 39 : formation of basic compounds from (abst.), 4, 206 : of the monobasic acids of the aliphatic series, preparation of (abst.), 5, 25 : preparation of nitriles from, - - - - - P. 2, 123
 Amidines, new class of (abst.), 5, 24 : and imido-ethers, action of hydroxylamine upon (abst.), 6, 236 : and thiamides of monobasic organic acids (abst.) - - - - - 2, 188
 Amido bases, phenolates of (abst.) - - - - - 5, 100
 Amido group, replacement of, in aromatic amines by the halogens (abst.) - - - - - 7, 119
 Amido-acids, action of mustard oils on (abst.), 7, 85: aromatic (abst.), 2, 370
 Amido-azo-compounds, action of hydrochloric acid upon (abst.) - - - - - 7, 86
o-Amidoazo-compounds (abst.) - - - - - 6, 82
 β -Amidobutyric acid (abst.) - - - - - 2, 367
 Amidomercaptans of the fatty series, anhydro-bases from (abst.) - - - - - 12, 158
 Amidoximes and azoximes, behavior of (abst.) - - - - - 8, 75
 Amines, action of bromine on, in alkaline solution (abst.), 5, 129 : action of, on dichloronaphthoquinone (abst.), 4, 265 : action of, on quinone (abst.), 8, 23 : action of, on quinones (abst.), 4, 226, 265: action of sodium hydroxide, calcium oxide, and magnesia on (abst.), 6, 27: aromatic, action of iodine monochloride upon (abst.), 1, 484 : aromatic, compounds of, with silver nitrate and sulphate (abst.), 1, 483 : aromatic, a few benzoyl derivatives of (abst.), 7, 245 : aromatic, nitriles and carboxylic acids from (abst.), 6, 85 : aromatic, replacement of the amido-group in, by the halogens (abst.), 7, 119 : use of, in dyeing (abst.), 8, 231 : decomposition of (abst.), 9, 104 : heat of combustion of some (abst.), 7, 289 : in juice of sugar cane, 18, 743 : primary, action of benzotrichloride on, - - - - - 1, 524
 Ammonia, action of alkyl chlorides on (abst.), 8, 95: action of, on di- and tri-halogen substitution products of the hydrocarbons (abst.), 12, 228 : action of, on molybdenyl chloride, 15, 61 : action of, on nitrosophenols (abst.), 7, 86 : action of, on wolframyl chloride, 15, 68 : commercial, tarry ingredients in (abst.), 1, 92 : com-

pounds of uranyl chloride with (abst.), 7, 121 : decomposition of, by heat (abst.), 6, 73: determination of nitric acid by transformation into, P. 2, 9 : determination of, in potable waters (abst.), 1, 565 : displacement of, by magnesia (abst.), 9, 99 : electrolysis of carbon in (abst.), 8, 178 : emission of, by vegetable soils (abst.), 10, 12 : estimation of, by Schlösing's process, for plant extracts (abst.), 6, 41 : formation of, 11, 40, 44 : heat of formation of (abst.), 2, 433 : liquefaction of, apparatus for (abst.), 4, 220 : new compounds of nitric and acetic acids with (abst.) 4, 234 : process for determination of, in water analysis, 5, 104: separation of, from trimethylamine, 18, 670 : used in United States, 15, 567 : from water, collector for the distillation of, 20, 286

Ammonia and aldehydes, action of, on benzil (abst.) 7, 31 : and nitrous acid, formation of, from free nitrogen (abst.), 12, 350

Ammonia soda process, influence of, on the value of hydrochloric acid and chlorine (abst.), 6, 174

Ammoniacal solutions, apparatus for evaporating (abst.), 9, 220

Ammonio-silver compounds, history of (abst.), 6, 73

Ammonium acid sulphates, P. 1, 88 : alum, fractional dehydration of, 4, 180 : bases derived from quinoline (abst.), 7, 119 : benzenesulphonate, products of the dry distillation of (abst.), 7, 231: bromoselenate, preparation of, 20, 566, 571: chloride, dissociation of, by heat, 12, 48 : chloride, process for obtaining, from the nitrogen of coal, coke, etc. (abst.), 10, 184 : chloride solution, standard, alteration of, in the dark, P. 2, 147 : chloride, standard solution of, action of light and darkness on, 2, 246: citrate solution, method of neutralizing, 18, 457 : citrate solution, preparation of, 17, 47 : citrate solution, preparation of a neutral, 20, 585 : compounds, new class of (abst.), 2, 224 : hydroxide, action of, on the halogen salts of lead, 6, 218 : hydroxide, on the existence of (abst.), 6, 189 : molybdate, existence of phosphoric acid in (abst.), 6, 98 : molybdate solution, a modified, 18, 445 : nitrate, production of, in ozonization of air by phosphorus, 3, 5 : nitrate, rate of decomposition of (abst.), 5, 235 : nitrite, and by-products in ozonization of air, etc., 1, 145 : nitrite, decomposition of, by means of platinum sponge (abst.), 12, 473 : nitrite and hydrogen dioxide, production of, in burning hydrogen and hydrocarbons in air, 6, 17 : oxalate, acid, influence of, on the solubility of neutral oxalate (abst.), 8, 71 : palladium bromide, 16, 467 : phosphomolybdate, gravimetric estimation of phosphoric acid as, 18, 23: phosphomolybdate, reducing action of zinc on, 17, 747 : ruthenium nitrosochloride, 16, 390 : salts, action of, on glycerol (abst.), 8, 273 : salts, action of, on metallic sulphides (abst.), 1, 331 : salts, action of sodium hydroxide, calcium oxide, and magnesium oxide on (abst.), 6, 27 : sulphate, solubility of copper sulphate in the presence of (abst.), 8, 34 : sulphide, dissociation of (abst.), 1, 402 : sulphocyanide, titration of halogens, copper, and mercury with (abst.), 1, 323 :

thiocarbamate, use in analytical work (abst.), 9, 115 : thiosulphate, formation of, in gas generators, 8, 47 : selenide, - 20, 277

Amyl alcohol, dextrorotatory (abst.), 1, 273: alcohol, Jorissen's reaction for (abst.), 4, 196, 207 : chloracetate (abst.), - - - 8, 74

β -Amylan and γ -amylan (abst.), - - - - - 4, 143

Amylideneaniline (abst.), - - - - - 1, 164

Amylnaphthalene, preparation of (abst.), - - - - - 6, 164

Analyzing and sampling commercial products, standard methods of (abst.), - - - - - 6, 200

Analysis, desirability of and practicability of establishing uniform methods of (abst.), 6, 30 : indirect, calculation of, 17, 466 : microchemical, of minerals and rocks (abst.), 1, 95 : of organic compounds containing halogens or nitrogen (abst.), 1, 254 : organic, in the wet way (abst.), 1, 542 : proximate, of plants (abst.), - 2, 220

Analytical chemistry, recent advances in, 15, 376 : reviews or reports on progress of, - - - - - 1, 83, 320, 527 ; 4, 160, 189

Analytical operations and apparatus (abst.), - - - - - 7, 92, 180

Analytical work, the dignity of (presidential address) - - - - - 20, 81

Anethol. See allylanisoil.

Angelic and methylcrotonic acids, contributions to the history of (abst.), - - - - - 1, 396

Angelic and tiglic acids, constitution of (abst.), 1, 241 : contributions to the knowledge of (abst.), - - - - - 1, 240

Anglesite, reproduction of, by wet process (abst.), - - - - - 10, 113

Anhydrides, mixed (abst.), 10, 13 : formation of, in the succinic acid series (abst.), - - - - - 12, 157

Anhydro-bases from amidomercaptans of the fatty series (abst.), - - 12, 158

Anhydrolupinin (abst.), - - - - - 5, 17

β -Anilido- and β -amidobutyric acid (abst.), - - - - - 2, 367

Aniline, action of phosphorus pentasulphide on (abst.), 10, 40 : application of, in qualitative analysis (abst.), 5, 52 : compounds of, with metallic salts, 3, 136 : compounds of nickel and cobalt chlorides with (abst.), 1, 165 : compound of oenanthaldehyde with, 5, 2 : introduction of methyl or ethyl groups into (abst.), 5, 64: new salts of (abst.), 1, 286: synthesis of homologues of (abst.), 4, 228: titration of (abst.), 6, 27: use of, as absorbent of cyanogen (abst.), 10, 156

Aniline black (abst.), 7, 63: black, photographic process by means of, 8, 189 : colors, detection of, in wines, fruit juices, etc. (abst.), 9, 201 : derivative of α -chlordinotrophenol, - - - - - P. 2, 111

Aniline carbonate (abst.), 10, 114 : dichromate (abst.), - - - - - 9, 173

Aniline, *p*-brom-, derivatives of (abst.), 2, 224 : *o*-nitro-, method of preparing (abst.), - - - - - 7, 227

Anilinesulphonic acid, *o*-nitro- (abst.), - - - - - 7, 227

Anilines, chlor- and chlornitro- (abst.), - - - - - 2, 57

Anisoil, *m*-nitro-, behavior towards ammonia (abst.), - - - - - 1, 169

Anisoilphthaloylic acid (abst.), - - - - - 8, 182

Anthemene from Roman camomile (abst.), - - - - - 6, 191

Anthracene, synthesis of (abst.), - - - - - 5, 132
 Anthracene compounds of the chrysazine series (abst.), - - - - - 1, 290
 Anthracene series, experiments in, - - - - - 17, 354
 Anthracenecarboxylic acid, the third (abst.), - - - - - 2, 95
 Anthracylamine (abst.), - - - - - 4, 230
 Anthragallool, dyeing properties of (abst.), - - - - - 6, 142
 Anthramine, on (abst.), - - - - - 4, 207 ; 5, 25
 Anthranilic acid, preparation of (abst.), 7, 60 : production of, from
 α -nitrotoluene (abst.), - - - - - 2, 227
 Anthranol, amidomethyl-, (abst.), - - - - - 5, 241
 Anthrapurpurine, relation to isopurpurine and flavopurpurine, - - - 1, 184
 Anthraquinoline, synthesis of (abst.), - - - - - 6, 167, 234
 Anthraquinone, formation of, under peculiar conditions, 12, 26 : new
 synthesis of (abst.), - - - - - 7, 32
 Anthraquinone, diamido-, constitution of (abst.), 1, 491 : nitroamido-
 and hydroxymethyl- (abst.), - - - - - 5, 240
 Anthraquinonesulphonic acid, action of ammonia on (abst.), 2, 365 :
 reduction of (abst.), - - - - - 1, 291
 Anthrax virus, preparation of cultivations of (abst.), - - - - - 6, 78
 Antimonic chloride, action of, on acetic acid and acetic anhydride
 (abst.), - - - - - 2, 363
 Antimony, alloys of, with arsenic, lead, and tin, analysis of, 17, 869 :
 alloys of, with lead, commercial valuation of, 16, 541 : atomic
 weight of (abst.), 1, 320 : chronic poisoning by (abst.), 5, 118 :
 detection of, in minerals (abst.), 10, 173 : detection of tin in pres-
 ence of (abst.), 4, 168 : determination of, by Marsh's test (abst.),
 12, 476 : determination of, volumetric (abst.), 4, 167 : electrolysis
 of pyrophosphate of (abst.), 12, 173 : elimination of, from the hu-
 man system, P. 2, 142 : heat of formation of the fluoride, chloride,
 and oxychlorides of (abst.), 6, 157 : precipitation of, in antimony
 potassium tartrate, 17, 87 : Reinsch's test for, - - - - - 18, 953
 Antimony cinnabar, on the formation of, 18, 342 : compounds, aro-
 matic (abst.), 5, 63 : potassium chloride (abst.), 5, 113 : potassium
 chlorobromide, crystallographic examination of (abst.), 5, 114 :
 sulphide, researches on (abst.), 9, 5 : trichloride, compounds of
 naphthalene and benzene with (abst.), - - - - - 5, 60
 Antimony, separation of, from arsenic (abst.), 1, 332, 483 : 9, 11 :
 qualitative (abst.), 6, 98 : from bismuth, electrolytic, 15, 203 :
 from cadmium, electrolytic, 15, 200 : from copper, electrolytic, 15,
 32 : from copper, by hydrobromic acid gas, 20, 804 : from copper,
 by hydrochloric acid gas, 18, 1035 : from gold (abst.), 8, 278 :
 qualitative (abst.), 10, 156 : from lead, by hydrobromic acid gas,
 20, 801 : from mercury, electrolytic, 15, 205 : from platinum
 (abst.), 8, 278 : qualitative (abst.), 10, 156 : from tin (abst.), 1,
 483 ; 8, 76 ; 9, 11 : qualitative (abst.), 6, 98 : volumetric (abst.), 8, 200
 Antimony and arsenic, identification of, 13, 210 : poisoning, by chem-
 ical history of a case of, - - - - - 17, 667

Antimony potassium mucate and saccharate (abst.) - - - - 6, 35

Antiseptic soap (abst.) - - - - 10, 92

Antiseptic values of chlorides, nitrates, and sulphates (abst.) - - - - 9, 190

Antiseptics, behavior of, toward salivary digestion, 14, 4 : effect of, on the action of diastase (abst.), 10, 91 : influence of, upon peptic digestion, 19, 889 : two new (abst.), 4, 242 : see also Disinfectants. 6, 79

Antiseptics and bacteria (abst.) - - - - 14, 350

Aphis, honey from, - - - - 14, 350

Apparatus, analytical (abst.), 7, 92, 180 : for automatic filtration, 19, 284 : for delineation of curved surfaces, 13, 263 : for determination of melting-points (abst.), 4, 169 : for determining solubilities, 16, 715 : for effecting solution, 19, 286 : extraction, for fats (abst.), 4, 250 : graduated, government facilities for standardizing 20, 912 : for heating sealed tubes, 13, 182 : illuminating, 17, 496 : for laboratory (abst.), 7, 150 : for liquefaction of ammonia (abst.), 4, 220 : for measuring reagents, 19, 282 : for measuring sterilized solutions (abst.), 9, 123 : for moisture experiments with soils, 19, 623 : for obtaining distilled water from service steam, P. 1, 211 : for promoting the interaction of liquids and gases, 15, 361 : for rapid gas analysis, 3, 91 : for reducing measured volumes of a gas to normal conditions (abst.), 6, 97 : for the technical analytical laboratory, 19, 281

Applied Chemistry, Second International Congress of, 20, 137, 234, 550

Applied chemistry, the year's progress in (review), - - - - 20, 967

Apricot, peach, and walnut oils (abst.) - - - - 8, 184

Arabic acid, composition of, etc. (abst.) - - - - 6, 87

Aragonite, note on, 1, 79 : containing lead, analysis of, - - - - P. 2, 14

Arc light, action of, on gases (abst.) - - - - 12, 351

Areometers, descriptions of, corrections for, etc., P. 1, 2, 8, 19, 40, 48 : early mention of, 13, 252 : and graduated glass vessels, verification of, - - - - P. 2, 128

Argol. See Tartaric acid.

Argon, 16, 719; 17, 219 : atomic weight of, 18, 211 : bibliography of, 19, 133 : compounds of, 17, 422 : a constituent of uraninite (note), 17, 421 : density of, 20, 170 : discussion on, in Royal Society, 17, 236 : in gas given off by heating metallic oxides in hydrogen, 20, 232 : liquefaction and solidification of, 17, 233 : present knowledge of, 19, 124 : the spectra of, 17, 230 : use of, in thermometry, - - 17, 477

Arita porcelain, raw materials used in making, - - - - 2, 315

Aromatic lead compounds (abst.), 10, 39 : organic salts of phosphoric acid, preparation of (abst.), 5, 18 : para-compounds, so-called, introduction of azo group in (abst.), 7, 32 : products of animal body (abst.), 2, 226 : sulphonic acids, action of fused alkalies upon (abst.) - - - - 2, 294

Aromatic bases, compounds of, with metallic salts, 3, 134 : condensation products of (abst.) - - - - 5, 19

Aromatic compounds, action of iodine upon (abst.), 1, 393 : action of iodine on (abst.), 2, 369 : estimation of nitrogen by Kjeldahl

method in, 7, 108: researches on isomerism in (abst.), - - - 7, 119

Aromatic hydrocarbons, oxidation of substitution products of (abst.), - - - 1, 115; 2, 221

Arsenate, ferric, production of a crystallized (abst.), - - - 2, 132

Arsenates, action of hydrochloric acid gas upon, 17, 683: a few crystallized (abst.), 8, 165: neutral to litmus (abst.), 4, 272: of nickel, conditions of formation of, etc. (abst.), - - - 8, 49

Arsenic, amounts of, found in wall papers, etc., 2, 339: atomic weight of, 18, 1049: 19, 363: detection of, by Marsh's test (abst.), 12, 353, 477: detection of, by Reinsch's test, 18, 953: detection of, by Schneider's process, modified (abst.), 1, 555: determination of, in metallic copper (abst.), 4, 167: determination of, in pyrites (abst.), 10, 66: determination of, volumetric (abst.), 1, 333: in glycerol, 17, 883: occurrence of, in bone phosphate fodder (abst.), 11, 54: poisonous effects of, chemical theory of (abst.), 4, 268: poisonous nature of, chemical cause of, 2, 115: post-mortem diffusion of, 13, 283: recovery of, - - - 14, 223

Arsenic compounds, aromatic, formation of (abst.), - - - 5, 63

Arsenic, separation of, from antimony (abst.), 1, 332; 8, 76; 9, 11: from bismuth, electrolytic, 15, 202: from cadmium, electrolytic, 15, 201: from cadmium, by hydrobromic acid gas, 20, 804: from cadmium, by hydrochloric acid gas, 18, 1039: from cobalt, by hydrobromic acid gas, 20, 808: from cobalt, by hydrochloric acid gas, 18, 1042: from copper, by hydrobromic acid gas, 20, 805: from copper, by hydrochloric acid gas, 18, 1039: from gold (abst.), 8, 78: qualitative (abst.), 10, 56: from iron, by hydrobromic acid gas, 20, 809: from iron, by hydrochloric acid gas, 18, 1040: from platinum (abst.), 8, 78: qualitative (abst.), 10, 156: from silver by hydrobromic acid gas, 20, 806: from silver, by hydrochloric acid gas, 18, 1039: from tin (abst.), 1, 483; 8, 76; 9, 11: from vanadium, by hydrochloric acid gas, 18, 1051: from zinc, by hydrochloric acid gas, - - - 18, 1041

Arsenic tests of the U. S. Pharmacopoeia, - - - 16, 580

Arsenic and antimony, identification of, 13, 210: poisoning by, chemical history of a case of, - - - 17, 667

Arsenic, antimony, tin, and lead, analysis of alloys of, - - - 17, 869

Arsenic and copper left on sprayed fruit, - - - 16, 71

Arsenic, phosphorus, sulphur, etc., estimation of, in native copper (abst.), - - - 6, 241

Arsenic acid, action of hydrogen sulphide on (abst.), 10, 11: preparation of (abst.), 7, 285: reduction of, in solution (abst.), 7, 123: separations of, from metals (abst.), 1, 533: dimethyl-, physiological effects of (abst.), 1, 160: phenyl- and diphenyl-, physiological effects (abst.), - - - - - 1, 159

Arsenides, formation of, by pressure (abst.), - - - - - 5, 68

Arsenious oxide, solubility of, in coffee decoctions, - - - - - P. 1, 2, 56

Arsenomolybdic acid (abst.), - - - - - 6, 286

Arsenopyrite, chemical behavior of, 16, 624 : constitution of, - 19, 948
 Arsine. See Hydrogen arsenide.
 Arsenotungstic acid (abst.), - - - - - 6, 306
 Asbestos, artificial, see French chalk : use of, in filtration (abst.), 10, 69
 Asbestos cloth for blotting paper in milk analysis (abst.), 9, 175 :
 filters, note on (abst.), - - - - - 4, 248
 Ash, determination of (abst.), 10, 68, 194 : of certain weeds, anal-
 yses of, 2, 24 : for extraction of iodine, preparation of (abst.),
 2, 434 : of plants, determination of alkalies in (abst.), 1, 357 :
 of raw tanning materials, composition of the, - - - - - 20, 338
 Ashes, volcanic, from Mt. Etna, analysis of (abst.), 4, 232 : from
 Krakatoa, in 1883 (abst.), 6, 127 : from Vesuvius, composition of
 (abst.), - - - - - 4, 237
 Ash analysis, changes in official methods of, - - - - - 16, 792
 Asparagine, precipitation of (abst.), - - - - - 5, 63
 Asphalt, analysis of, 17, 55 : determination of sulphur in 20, 882 :
 examination of (abst.), 4, 196 : technical analysis, of, 16, 809 : 18, 275
 Aspirator, new, - - - - - 5, 71 : 7, 106
 Assay, scorification, loss of gold and silver during, 16, 313 : for
 silver, commercial, accuracy of, 16, 505 : for fine silver, modified
 method of, - - - - - 19, 814
 Assay furnace, gas (abst.), - - - - - 6, 244
 Astringents in wine, determination of (abst.), - - - - - 4, 242
 Atmosphere : see Air.
 Atmospheric nitrogen, assimilation of, - - - - - 12, 145
 Atomic volume as a periodic function, - - - - - 20, 935
 Atomic weights, report of committee, 16, 179; 17, 201; 18, 197;
 - - - - - 19, 359; 20, 163
 Atoms, determination of number of, in a molecule (abst.), - - - - - 6, 47
 Atropic and isatropic acids (abst.), - - - - - 1, 243
 Atropine, contributions to history of (abst.), - - - - - 4, 176
 Atropine periodides and iodomercurates, - - - - - 20, 329
 Auramines (abst.), - - - - - 9, 212
 Auric chloride, anhydrous, solvents of (abst.), 8, 34 : combination
 of, with sulphur tetrachloride and selenium tetrachloride
 (abst.), - - - - - 8, 20
 Aurin (abst.), 2, 51 : by-product in the manufacture of (abst.),
 5, 234 : formation of (abst.), - - - - - 1, 386
 Avenalin, a globulin from the oat kernel, - - - - - 18, 621
 Axle grease, preparation of (abst.), - - - - - 8, 26
 Azoanthrol dyes (abst.), - - - - - 4, 266
 Azobenzene, on the direct substitution products of (abst.), - - - - - 5, 54
 Azo colors, 1, 465; 2, 446; (abst.), 4, 173 : belonging to tetrazo
 group, 3, 20 : spectra of, - - - - - 6, 117, 149
 Azo group, introduction of, in the so-called aromatic para com-
 pounds (abst.), - - - - - 7, 32
 Azo compounds from aromatic amides, 3, 39 : of derivatives of acet-

anilide (abst.), 7, 55: new (abst.), 1, 394; 2, 95: nomenclature of complex (abst.), 5, 24: secondary and tertiary, researches on (abst.), - - - - - 6, 94

p-Azocresol (abst.), - - - - - 6, 161

Azo and diazo compounds of cresols (abst.), - - - - - 7, 54

Azoiimide. See Hydrazoic acid.

Azonaphthalene (abst.), - - - - - 7, 228

Azophenol, dichlor-, constitution of (abst.), - - - - - 1, 493

Azophenols (abst.), - - - - - 1, 65

Azotometer, Scheibler's calcimeter used as an (abst.), - - - - - 1, 375

Azotometry, remarks on (abst.), - - - - - 6, 96

Azoximes and amidoximes, behavior of, - - - - - 8, 75

Azylines (abst.), - - - - - 5, 52

Bacillus anthracis, heating of cultivations of (abst.), - - - - - 6, 130

Bacillus ferment of urea, researches on the (abst.), - - - - - 1, 488

Bacillus of tuberculosis, fats contained in, 18, 449: some products of, 19, 782

Bacillus tuberculosis and *B. mallei*, composition of, - - - - - 17, 605

Bacteria, chemical composition of (abst.), 2, 136: in milk sugar, 18, 687: presence of, in living healthy animals (abst.), 2, 289: study of gas-producing, 18, 157: testing water for (abst.), - - - - - 1, 103

Bacteria counter, a new, - - - - - 20, 507

Bacteria and antiseptics (abst.), - - - - - 6, 79

Bacterial growth, chemical products of, and physiological effects, 13, 61

Bacteriological examination of water, sanitary value of, - - - - - 19, 591

Baking powders, alum, influence of, on digestion, etc. (abst.), 10, 171: alum phosphate, 12, 452: solubility of alumina residues from, in gastric juice, - - - - - 9, 27

Balance, device for adjusting, 16, 699: for first year's work in general chemistry 18, 189: safety attachment for riders of, - - - - - 16, 764

Bananas, ripe and unripe, composition of (abst.), - - - - - 4, 272

Bang's process for the detection of impurities in alcohol (abst.), - - - - - 10, 27

Banquet to Messrs. Mond and Tyrer, - - - - - 17, 997

Barium, atomic weight of, 16, 185; 17, 205: separation of, from strontium (abst.), - - - - - 12, 118, 410, 501

Barium camphorate (abst.), 6, 91: cesium ferrocyanide, 20, 33: cesium ruthenocyanide, 20, 31: chloride, decomposition of, by potassium oxalate (abst.), 2, 346: chloride, volatility of, 19, 156: chromate, crystallized, manufacture of (abst.), 1, 279: dioxide, derivatives of (abst.), 2, 365: ferrate, reactions of, 17, 765: ferrocyanide, use of organic bases in preparing, 17, 927: hydroxide for absorbing carbon dioxide, 17, 247: hydroxide, preparation of (abst.), 7, 65: permanganate, method of preparing (abst.), 6, 77: potassium ferrocyanide, 20, 32; potassium ruthenocyanide, 20, 30: propylideneacetate, 17, 22: ruthenocyanide, 18, 986: sulphate, effect of an excess of reagent in precipitation of, 18, 793: sulphate, precipitation of, 4, 212: sulphate, precipitation and purification of, 3, 37; titanate (abst.), 8, 178: trinitride, - - - - - 20, 229

Barium group, analysis of (abst.) - - - - - 12, 501
 Barium and strontium, estimation of, in silicate analysis, 16, 83: occurrence of, in silicate rocks, - - - - - 16, 81
 Barley, proteids of, 17, 539: the steeping of (abst.), - - - - - 4, 143
 Barley fat, composition of (abst.), - - - - - 8, 274
 Barley and malt, nitrogenous constituents of (abst.), - - - - - 6, 173
 Baryto-celestite, composition of, - - - - - 13, 290
 Base, a new (abst.), 1, 285; 2, 94: new, found in the animal body (abst.), - - - - - 7, 175
 Bases, organic, certain additive reactions of, 18, 28: putrefaction, from fish (abst.), - - - - - 7, 175
 Bast fibers, chemistry of (abst.), - - - - - 4, 169
 Baths, sulphurous, observations on (abst.), - - - - - 1, 389
 Battery, carbon, without metals (abst.), 9, 38: "Lalande-Spence" primary, 7, 195: Skrivanow's (abst.), - - - - - 6, 126
 Batteries, thermo-electric, electromotive force of (abst.), - - - - - 1, 585
 Baudouin's reagent to detect sesame oil (abst.), - - - - - 9, 177
 Bauxite, analysis of, 18, 780: commercial analysis of, - - - - - 20, 209
 Bearing-metal alloys, analysis of, - - - - - 19, 934
 Beef fat, microscopic detection of, in lard, - - - - - 18, 189
 Beer, analysis of, use of polariscope in (abst.), 1, 363: brewed without hops, bitter principle of (abst.), 1, 363: detection of saccharin in (abst.), 10, 88: detection of salicylic acid in (abst.), 1, 578: determination of organic nitrogen in (abst.), - - - - - 4, 162
 Beeswax, adulteration of (abst.), 1, 361: analysis and composition of (abst.), 6, 170: method for investigation of (abst.), 1, 578: non-acid components of (abst.), - - - - - 8, 229
 Beet root, analysis of, - - - - - 3, 151
 Beet root juice, fermentation of, during diffusion (abst.), 2, 91: residues, nitriles produced in destructive distillation of (abst.), 1, 277
 Beet roots, sugar, experiments with, - - - - - P. 2, 56
 Beet sugar, raw, reducing substance in (abst.), - - - - - 10, 38
 Beet sugars, vanillin in certain unrefined (abst.), - - - - - 2, 368
 Beginners in chemistry, quantitative work for, - - - - - 16, 59
 Belladonnine isomeric with atropine (abst.) - - - - - 2, 173
 Bellows for blow-pipe, - - - - - P. 2, 29
 Benzal acetoacetic ester, action of phenylhydrazine on (abst.), - - - - - 8, 55
 Benzaldehyde, action of acetyl chloride on, in the presence of zinc dust (abst.), 5, 133: action of nitrogen trioxide on, 12, 56: action of, on xylidine, 8, 173: condensation products of, with malonic and *iso*-succinic acids (abst.), - - - - - 5, 237
 Benzaldehyde, *o*-nitro-, and its behavior to nascent hydrogen (abst.), 2, 366: *o*-nitro-, preparation of (abst.), 6, 87: *o*-nitro-, preparation of indigo-blue from (abst.), 5, 63: *p*-nitro and *p*-toluidine, condensation products of (abst.), - - - - - 10, 41
iso-Benzalphthalide and benzylideneephthalide (abst.), - - - - - 9, 210
 Benzamide, heat of solution of, - - - - - 18, 154

Benzamide, *o*-amido-, derivatives of (abst.), - - - - - 7, 144

Benzene, action of isobutyl chloride on, in the presence of aluminum chloride (abst.), 6, 191: action of chlorinated aldehydes on (abst.), 6, 165: action of ethyl chlorocarbonate on (abst.), 4, 143: action of, on ethylene in presence of aluminum chloride (abst.), 1, 390: action of methylene chloride on (abst.), 6, 163: action of nitrogen trioxide on, 12, 9: action of oxygen, ozone, and nascent oxygen upon, 3, 16: commercial, presence of an isocyanide in (abst.), 7, 29: compounds of, with antimony trichloride (abst.), 5, 60: constitution of (abst.), 4, 229: determination of, in illuminating gas, 16, 697: heat of combustion of (abst.), 4, 229: method of obtaining, from coal gas (abst.), 6, 175: mixture of, with acetic acid does not separate in layers, 17, 932: remarks on the action of vinyl bromide and tribromide on, in the presence of aluminum chloride (abst.), 6, 166: separation of, from crude tar, naphtha, and crude benzines (abst.), 6, 101: syntheses by action of metallic chlorides upon (abst.), - - - - - 1, 397

Benzene derivatives, isomerisms of (abst.), 1, 233: hexachloride, action of water and silver hydroxide on 2, 205: theory, contribution to (abst.), - - - - - 12, 234

Benzene, *p*-amidoctyl- (abst.), 7, 176: brom-, action of aluminum chloride on (abst.), 4, 174: monobrom-, a second (abst.), 12, 352: nitro-, oxidation of phenol by means of (abst.), 7, 207; perchlor-, perchlorphénol from (abst.), 7, 228: tetrabrom (abst.), - - - - - 4, 175

Benzenes, diamido-, isomeric, action of sulphuric acid on (abst.), 2, 95: nitramido-, isomeric, action of sulphuric acid on (abst.), - - - - - 2, 95

Benzenesulphonate, ammonium, products of the dry distillation of (abst.), 7, 231: sodium, note on preparation of, - - - - - 20, 549

Benzenesulphonic acid, derivatives of, - - - - - 19, 835

Benzenesulphonic acid, pentabrom- (abst.), - - - - - 2, 186

Benzenesulphonic acids, nitro-, amido-, and brom- (abst.), - - - - - 2, 186

Benzylamidoxime, derivatives of (abst.), - - - - - 8, 75

Benzhydrol and naphthalene, condensation of (abst.), - - - - - 2, 369

Benzidine, tetramethyl- (abst.), - - - - - 6, 87

Benzidine and hydrazobenzene (abst.), - - - - - 7, 59

Benzil, action of aldehydes and ammonia on (abst.), 7, 31: on the constitution of (abst.), - - - - - 5, 126

Benzoic acid, action of nitrogen trioxide on, 12, 56: curve of solubility of (abst.), 1, 272: solubility of (abst.), - - - - - 2, 88

Benzoic acid, amido-, derivatives of succinic, sebacic, and phthalic acids (abst.), 7, 202: amido-, nitrogenated colloid derived from (abst.), 6, 134: dinitro- (abst.), 2, 369: hydroxy-, heat of neutralization of (abst.), 8, 21: nitrosulpho-, and some derivatives (abst.), 2, 44: *p*-propyl-, synthesis of (abst.), - - - - - 5, 20

Benzoic acids, dihydroxy-, and iodosalicylic acids (abst.), 5, 29, 59: hydroxy-, heat of formation of (abst.), - - - - - 8, 22

Benzoic anhydride, action of, on pyrrol (abst.) - - - - - 7, 84
 Benzoic sulphinide, formation of (abst.) - - - - - 2, 222
 Benzoin, action of amides upon, - - - - - 18, 101
 Benzonitrile, action of nitrogen trioxide on, - - - - - 12, 55
 Benzotrichloride, action of, on primary amines, 1, 524: combinations of, with aromatic bases (abst.) - - - - - 4, 207
 Benzoyl derivatives of aromatic amines (abst.) - - - - - 7, 245
 Benzoylacetic acid (abst.) - - - - - 6, 84
 Benzoylacetic acid, *p*-nitro (abst.) - - - - - 7, 31
 Benzoyldiphenylamine, action of phosphorus pentachloride on (abst.) 4, 264
 Benzureide, - - - - - 6, 15
 Benzyl bromide, *p*-, *m*-, and *o*-brom-, (abst.) 1, 282: bromide, *p*-chlor- (abst.) 1, 282: bromide, *p*-iodo- (abst.) 1, 283: chloride, action of zinc powder on (abst.) 8, 181: chloride, *o*-nitro- (abst.) 7, 56: cyanide, nitro-, diazo derivatives of (abst.) 5, 96: derivatives (abst.) 9, 211: ethers of the brominated nitrophenols, and their behavior on reduction (abst.) - - - - - 7, 245
 Benzylidene chloride, *p*-nitro- (abst.) - - - - - 8, 74
 Benzylidenephthalide and iso-benzalphthalide (abst.) - - - - - 9, 210
 Benzylmesitylene (abst.) - - - - - 5, 121
 Benzylmethylaniline, 7, 42: green coloring-matter, from, - - - - - 7, 40
 Benzylphenol and its derivatives (abst.) - - - - - 4, 143, 204
 Benzyl-*o*-thioformate, crystallography of (abst.) - - - - - 2, 224
 Berthelot's contributions to the history of chemistry (review), - - - - - 18, 466
 Beryl, analyses of, - - - - - 16, 65
 Beryllium, on (abst.) 12, 154: researches on (abst.) 12, 472: separation of, from iron, 17, 688: spectrum of, etc., (abst.) - - - - - 5, 115
 Beryllium borate, - - - - - P. 2, 114
 Beryllium: see also Glucinum.
 Berzelius medal, report on the, - - - - - 1, 132
 Bessemer ingot, composition of gases in, 2, 146: process, researches on (abst.) - - - - - 1, 165
 Betain in cotton-seed cake (abst.) - - - - - 7, 58
 Betulin (abst.) - - - - - 1, 157
 Beverages, carbonated, lead in, - - - - - 11, 99
 Bile, contributions to the chemistry of (abst.) 1, 493: detection of, in urine (abst.) - - - - - 1, 105
 Bile constituents in urine, determination of (abst.) - - - - - 12, 414
 Bindheimite, analysis of, - - - - - 1, 134
 Biochemistry, importance of the study of, - - - - - 16, 261
 Bird's nest, edible, composition of (abst.) - - - - - 7, 289
 Bismuth, atomic weight of, 17, 210: (abst.) 12, 151: electrolysis of pyrophosphate of (abst.) 12, 172: in lead in the manufacture of white lead, P. 1, 70: toxic character of (abst.) 10, 77: volumetric determination of, - - - - - 2, 43; 4, 141, 167
 Bismuth chloride, double salt of, with potassium bromide (abst.) 5, 113: iodide, action of water on (abst.) 4, 142: iodides with

alkyls and with vegetable bases, 20, 96: nitrate, basic, free from arsenic, preparation of (abst.), 2, 136: sulphide, solubility of, in alkaline sulphides, 18, 1091: sulphide, solubility of, in sodium sulphide, - - - - - 18, 683

Bismuth, separation of, from antimony, electrolytic, 15, 203, 204: from arsenic, electrolytic, 15, 202, 204: from cadmium, electrolytic, 15, 103: from cobalt, electrolytic, 15, 104, 105: from copper (abst.), 5, 244: from copper, by hydrochloric acid gas, 18, 1036: from lead, by hydrobromic acid gas, 20, 802: from lead, by hydrochloric acid gas, 18, 1034: from lead, 18, 1055: from mercury, electrolytic, 15, 28: from nickel, electrolytic, 15, 104, 105: from tin, electrolytic, 15, 204: from zinc, electrolytic, - - - - - 15, 104, 105

Bitter principle in fermented liquors brewed without hops (abst.), - - 1, 363

Bituminous rocks, commercial analysis of (abst.), - - - - - 2, 432

Blast-furnaces, titanium in, - - - - - 12, 91

Blast-furnace slags, calculation of, 12, 443: and the fusibility of silicates, - - - - - 12, 189, 307

Blasting gelatine, - - - - - 15, 552

Bleaching agents, action of, on writing ink (abst.), 9, 224: powder, on the constitution of (abst.), 5, 237: powder, rate at which it loses chlorine (abst.), - - - - - 10, 90

Bleaching and dyeing, on the chemistry of (abst.), 6, 197: of oils and grease, improvements in (abst.), - - - - - 8, 43

Blood, abnormal constituents of, due to leucocythemia, P. 1, 2, 29: coloring-matter of, action of hydrogen dioxide on (abst.), 4, 240: of a diabetic patient, levorotary β -hydroxybutyric acid in (abst.), 9, 113: process for the detection of (abst.), 10, 88: spectroscopic detection of (abst.), 10, 88: and urine, peptones in (abst.), - - - - - 8, 231

Blowing machine (abst.), - - - - - 1, 91

Blowpipe analysis, some extensions of the plaster-of-Paris method in, 18, 849: bellows, P. 2, 29: experiments upon silver chloride, bromide, and iodide, P. 2, 74: lamp, portable (abst.), 1, 91: lamp and candle, P. 2, 78: reactions with alloys of lead and tin, P. 2, 108: reactions for iodides, bromides, and chlorides, P. 2, 110: reagent, new, 19, (24): reagent, silver iodide as a, - - - - - 7, 132

Blowpipe, short pocket, - - - - - P. 2, 103

Boiler feed water, purification of, - - - - - 15, 610

Boiler scale, presence of oil in, - - - - - 18, 741

Boilers, peculiar perforations of zinc rods in, - - - - - 13, 286

Boiling-points, determination of, with small quantities of substance (abst.), 1, 376: etc., of esters of fatty acids (abst.), 8, 228: of esters and ethers of hydroxyacids (abst.), 1, 290; 2, 174: a function of the chemical nature of compounds (abst.), 12, 234: relation of, to vapor densities, 17, 969: of solutions of salts (abst.), - - - - - 9, 109

Bone-black, absorption of sugar by, 1, 509: action of, on salts (abst.), 1, 95: action of, on solutions of pure sugar, 1, 468: decarbonization of, 17, 503: rapid and accurate analysis of, - - - - - 17, 51

Bone oil, notes on, 4, 153: purification of (abst.) - - - - 6, 136
 Bone phosphate, separation of, from rock phosphate, - - - - 18, 491
 Bone phosphate fodder, arsenic in (abst.), - - - - 11, 54
 Books received, 17, 916, 997; 18, 100, 196, 310, 414, 474, 564, 660, 747, 848, 1027, 1112; 19, 92, 182, 274, 357, 513, 590, 681, 768, 844, 921, 956; 20, 79, 162, 241, 320, 392, 467, 553, 638, 730, 814, 897, 990
 Borax, employment of, for preserving meat (abst.), 1, 173: volatility of, - - - - 16, 410
 Bordeaux red, detection of, in wines (abst.), - - - - 4, 191
 Boric acid, complex acid containing (abst.), 2, 434: determination of (abst.), 9, 11: determination of, in borosilicates (abst.), 6, 239: determination of, in foods, 19, 55, 387: determination of, volumetric (abst.), 10, 43; 20, 288: physiological effect of (abst.), 6, 158: as a preservative, 1, 477: separation of, from phosphoric acid 19, 386: Turner's reaction for (abst.), 1, 528: volatility of, 19, 385
 Boric acid works at Larderello, - - - - 16, 538
 Borneol, action of carbon disulphide on (abst.), 12, 161: carbonic ether of (abst.), 4, 76: synthesis of an inactive (abst.), - - - - 8, 73
 Borneol, ethyl- (abst.), - - - - 9, 114
 Boron, analogy between, and C_2H_3 (abst.), 6, 158: atomic weight of, 16, 179: determination of, in organic bodies (abst.), 1, 543: quinivalence of (abst.), - - - - 2, 96
 Borosilicates, estimation of boric acid in (abst.), - - - - 6, 239
 Borotungstates (abst.), - - - - 2, 432
Botrytis bassiana and its crystalline products, - - - - 16, 860
 Bottle for specimens, - - - - 18, 412
 Brandy, determination of fusel oil in (abst.), - - - - 5, 27, 50
 Brasilin and haematoxylin (abst.), - - - - 7, 60
 Brass, on the analysis of, 16, 133: and bronze, analysis of, 19, 934: speed of dissociation of (abst.), - - - - 6, 75
 Brazilein, new compounds of (abst.), - - - - 4, 260
 Brazil nut, proteid of, - - - - 18, 621
 Bread, detection of alum in (abst.), 4, 188: and flour, analysis of (abst.), - - - - 1, 566
 British Association for the Advancement of Science, Toronto meeting, 19, 840
 Bromacetone, action of, on ethyl aceto-acetate (abst.), - - - - 6, 85
 Bromanil (tetrabromquinone), action of, on monamines, - - - - 2, 109
 Bromates, use of, in volumetric analysis (abst.), - - - - 7, 296
 Bromchloral (abst.), - - - - 4, 269
 Bromdichloracetic acid (abst.), - - - - 4, 269
 Bromdiphenylmethane, action of ammonia on (abst.), - - - - 2, 436
 Bromides, action of heat on, 5, 139: blowpipe reactions for, - P. 2, 110
 Bromine, action of, on the amides (abst.), 5, 21: action of, on amines in alkaline solution (abst.), 5, 129: action of, on carbon bisulphide (abst.), 5, 26: action of, on quinoline and pyridine (abst.), 4, 242: behavior of pyrotartaric acid with (abst.), 6, 308: behavior of silver haloid salts towards (abst.), 5, 245: carbon compounds of,

obtained in its manufacture (abst.), 5, 93: new combination of carbon and sulphur with (abst.), 4, 226: expulsion of sulpho group by (abst.), 4, 175: quantitative separation of, from chlorine (abst.), 7, 178: substitution of, for phenolic hydrogen (abst.), 7, 145: use of, for decomposing sulphides (abst.), 9, 35: vapor-density of (abst.), 5, 26: vapor-density of, at yellow heat (abst.), 2, 371

Bromine vapor, precipitation of manganese by means of (abst.), - 5, 244

Bromine and chlorine, indirect determination of (abst.), - 4, 161

Bromine, chlorine, and iodine, estimation of, in the presence of one another (abst.), 6, 49; 18, 688: separation and determination of (abst.), - - - - - 1, 384

Bromocaffeine, perhalides of, - - - - - 18, 370

Bromochloroform (abst.), - - - - - 4, 269

Bromodurene, action of sulphuric acid on (abst.), - - - - - 9, 215

Bromoform, preparation of, by electrolysis (abst.), - - - - - 7, 85

Bromopurpleo cobalt salts (abst.), - - - - - 1, 295

Bronze and brass, analysis of, - - - - - 19, 934

Bronze, phosphor-, analysis of, 19, 396: manufacture of, - - - - - 19, 393

Bronzes, on the analysis of, - - - - - 16, 133

Brucine, on the constitution of (abst.), 5, 95: new reaction of, with chromic acid (abst.), 1, 100: physiological action of (abst.), - 7, 116

Burette with automatic zero, 16, 145; 18, 1075: without graduations (abst.), 9, 17: Mohr's, modification of, 3, 124: mounted, P. 1, 181: portable, - - - - - P. 1, 159

Burette clamp, 16, 719: filler, 16, 870: holder, - - - - - 14, 15

Butter, adulterated, simple method for detecting (abst.), 8, 87: analysis of, by Koettstorfer's method (abst.), 1, 567: artificial, manufacture of, P. 1, 154: artificial, specific gravity of oil from (abst.), 4, 188: calorimeter used in detecting adulterations of, 18, 174: detection of falsification in (abst.), 10, 87: detection of foreign fats in (abst.), 1, 359, 567: determination of melting-point of, 15, 661: distinction of, from other fats (abst.), 1, 568: effect on, of feeding cotton-seed foods, 13, 134: estimation of coloring-matter in, 9, 41: examination of, 7, 134: examination of, by polarized light (abst.), 1, 358: glucose in, 20, 201: influence of food and animal idiosyncrasy on the composition of (abst.); 12, 16: modification of Hehner's method of testing (abst.), 1, 86: rancidity of (abst.), 8, 108: a sample of old, 9, 3: separation of coloring-matters in, 9, 76, 98: studies on (abst.), 8, 107: test for adulteration in (abst.), 8, 40: testing of, by means of refractometer (abst.), 9, 14: viscosimetric examination of, - - - - - 17, 719

Butter analysis (abst.), 11, 54: on Koettstorfer's method of (abst.), 1, 568; 6, 311: methods of (abst.), 8, 28: relation of cocoanut oil to methods of, - - - - - 7, 188

Butter fat (abst.), 12, 118: commercial, adulterations of (abst.), 1, 569: determination of volatile and insoluble fatty acids in,

16, 673: method for analysis of (abst.), 1, 568: and its substitutes, examination of, - - - - - 8, 155

Butter and its falsifications, a (conversazione), - - - - - 8, 247

Butter and lard, detection of foreign fats in, - - - - - 19, 796

Butter and milk, determination of solids and fat in (abst.), - - - - - 10, 27

Butter and tallow, determination of specific gravity of (abst.), - - - - - 8, 205

Butter and its substitutes (abst.), - - - - - 8, 276

iso-Butaldehyde, action of potassium carbonate on (abst.), 1, 292: condensation products of, obtained by means of alcoholic potassium hydroxide (abst.), - - - - - 5, 94

Butyl chloracetate (abst.), 8, 180: iodide, allyl iodide, and zinc, action of, on acetone (abst.), 7, 58: iodide, tertiary, action of, on isobutylene (abst.), - - - - - 2, 54

iso-Butyl chloride, action of, on benzene in the presence of aluminum chloride (abst.), - - - - - 6, 191

iso-Butyl-*o*-amidotoluenes, isomeric (abst.), - - - - - 7, 88

iso-Butylbenzene, β -amido-, derivatives of (abst.), - - - - - 10, 19

iso-Butylene, action of tertiary butyl iodide on (abst.), - - - - - 2, 54

iso-Butylenebromide, behavior of sodium phenylmercaptide with (abst.), - - - - - 12, 229

Butyrellite, composition of (abst.), - - - - - 9, 6

Butyric acid, pure (abst.), - - - - - 9, 6

Butyric acid, β -amido- and β -anilido- (abst.), 2, 367: β -hydroxy-, levorotatory, in the blood of a diabetic patient (abst.), - - - - - 9, 113

Bynedestin, a globulin of malt, - - - - - 18, 542

Bynin, a malt proteid, - - - - - 18, 552

Cacodylic acid, physiological effects of (abst.), - - - - - 1, 160

Cactaceae, the chemistry of, - - - - - 18, 624

Cadmium, atomic weight of, 18, 205; 19, 364: atomic weight of, electrolytic determination of, 18, 1016: determination of, in presence of copper (abst.), 4, 167: electrolysis of pyrophosphate of (abst.), 12, 171: electrolytic determination of, 19, (26), 379, 513, 870; 20, 280: (abst.), - - - - - 1, 330, 331, 391

Cadmium, separation of, from antimony, electrolytic, 15, 200, 202: from arsenic, electrolytic, 15, 201, 202: by hydrobromic acid gas, 20, 807: by hydrochloric acid gas, 18, 1039: from bismuth, electrolytic, 15, 103: from cobalt, electrolytic (abst.), 12, 174: from copper, electrolytic, 15, 102: (abst.), 8, 277: from iron, electrolytic (abst.), 12, 174: from manganese, electrolytic (abst.) 12, 174: from nickel, electrolytic (abst.), 12, 174: from silver, electrolytic, 16, 424: from tin, electrolytic, 15, 201, 202: from zinc, electrolytic (abst.), 7, 296: (abst.), 8, 277: electrolytic (abst.), - - - - - 12, 174

Cadmium sulphide, determination of (abst.), - - - - - 9, 35

Caffeic acid, - - - - - 20, 42

Caffeine (abst.), 4, 174: action of Wagner's reagent upon, 18, 331: determination of, 19, 279: new method for estimation of, 18, 338: notes on the estimation of, 18, 978: transformation of xanthine

into (abst.) - - - - - 4, 264
 Caffeine compound in kola, 19, 63: perbromides, 18, 356: perhalides, 18, 347: periodide, - - - - - 18, 350
 Caffeotannic acid, - - - - - 20, 42
 Calcite from York, Pa., - - - - - 15, 543
 Calcium, determination of, as carbonate after precipitation as oxalate, P. 2, 126: determination of, by photometric method, 18, 661: determination of, in the presence of excess of aluminum, phosphoric acid, etc. (abst.), 6, 169: dissociation of (abst.), - - - - - 2, 226
 Calcium salts of, volatility, of, 19, 156: spectrum of (abst.), - - - - - 1, 583
 Calcium acetate, crude, determination of acetic acid in (abst.), 1, 367: acetate, crude, valuation of (abst.), 1, 582: acetate, manufacture and analysis of, 4, 94: acid tartrate, note on, 13, 144: bromide, the hydration of, 16, 621: carbide, estimation of sulphides in, 18, 740: carbide, the manufacture of, 18, 311: carbide, properties of, 17, 306: carbonate, precipitation of (abst.), 1, 334: chloride, compound of, with normal propyl alcohol (abst.), 12, 156: chloride and sulphuric acid, relative values of, as desiccating agents (abst.), 6, 98: ferrocyanide, use of organic bases in preparing, 17, 927: hydroxide as a precipitant of suspended clay, 13, 100; iodide, the hydration of, 16, 621: orthophosphate, see Tricalcium phosphate: oxide, action of, in expelling ammonia from salts and amines (abst.), 6, 27: oxide, determination of, in quicklime, 16, 721: phosphate, action of sulphuric acid on (abst.), 2, 96: phosphate, properties of (abst.), 2, 133: propylideneacetate, 17, 23: sulphate, hydrated, influence of temperature on the composition of (abst.), 10, 78: sulphide with violet phosphorescence, preparation of (abst.), 8, 199: sulphite, stalactites and stalagmites of, 17, 242: thiosulphate, origin of (abst.), 7, 28: trinitride, - - - - - 20, 228
 Calculi, analyses of, 4, 215: intestinal, of horses, analyses of - - - - - 1, 430
 California wines, some characteristics of, - - - - - 16, 597
 Calorimeter, bomb (abst.), 7, 146: bomb, as a combustion furnace for ultimate analysis (abst.), 10, 172: bomb, determination of the thermal value of, 19, 439: for heats of combustion (abst.), 1, 586: respiration, description of a new, 20, 681: Thompson's industrial value of (abst.), - - - - - 10, 89
 Calorimetric measurements (abst.), 10, 15: method, a (abst.), - - - - - 1, 295
Calycanthus glaucus, analysis of the seed of (abst.), - - - - - 12, 15
 Camomile, Roman (*Anthemis nobilis*), anthemene from (abst.), 6, 191: oil of, organic acids obtained in the saponification of (abst.), 1, 238: oil of, the separate constituents of (abst.), - - - - - 1, 238
 Camphanic acid, constitution of (abst.), - - - - - 7, 82
 Camphenol, active, and ethylborneol (abst.), - - - - - 9, 114
 Campholurethane (abst.), - - - - - 4, 235
 Campholurethanes, two stereoisomeric (abst.), - - - - - 6, 163
 Camphonitrophenol, isomeric with nitrocamphor (abst.), - - - - - 12, 71

Camphor, Borneo: reclamation of priority (abst.), 1, 277: from *Ledum palustre* (abst.), 6, 95: quantitative determination of (abst.), 12, 477: peppermint, and some of its derivatives (abst.), 4, 144

Camphor chlorides (abst.), 2, 60: chloronitrated, isomerism of (abst.), 6, 131: dichloride (abst.), 4, 233: peroxide and barium camphorate (abst.), 6, 91

Camphor group, compounds of (abst.), 2, 179: motions and electricity, connections between, P. 1, 2, 66: motions, note on, 7, 13: oil, Japanese (abst.), 6, 313

Camphoric acid, note on (abst.), 12, 161: and its amide, action of dehydrating bodies upon (abst.), 1, 397; 2, 187

Candle material, determination of melting-point and composition of, 16, 825

Candle and lamp for blowpipe, P. 2, 78

Cane juice and raw sugar, occurrence of aconitic acid in, P. 1, 220

Cane sugar, action of acetic and hydrochloric acids on, 17, 320: detection of, in glucose 2, 111, 428: determination of glucose in, 1, 2: determinations of mixtures of, with milk sugar (abst.), 7, 149: determination of, in presence of glucose, 17, 312: exact determination of, by polariscope, 1, 2: refined, detection of anhydrous glucose in, 5, 41

Canned food, occurrence of tin in, 13, 200

Canned goods, collecting and analyzing gases in, 19, 733

Capric acid, dibrom- (abst.), 1, 292

Caproic acid, normal, electrolysis of (abst.), 8, 274

Caprolactone (abst.), 4, 270; 6, 162

Caprolactonic acid, carboxy-, and allylsuccinic acid (abst.), 5, 69

Capronic acid occurring in resin oil (abst.), 4, 228

Caprylbenzene, α -amido- (abst.), 7, 176

Caprylidene, an acetylene hydrocarbon (abst.), 9, 6

Caramel, identification of (abst.), 7, 62

Carballylic acid, Guinochet's isomeric (abst.), 12, 166

Carbamido-palladious chloride (abst.), 2, 137

Carbide of iron, chromium and molybdenum, 17, 799: of iron, chromium and tungsten, 17, 800

Carbides of iron and chromium, 17, 791

Carbinol, allyldiethyl-, 2, 54: allyldipropyl-, 2, 54: diallyl-*iso*-propyl-, 2, 177

Carbohydrate, new crystallizable (abst.), 12, 352: fermentable (abst.), 10, 78

Carbohydrates, acetyl compounds of (abst.), 2, 225: with chromates, behavior of, towards light (abst.), 1, 493; combustion of, by means of chromic acid (abst.), 7, 293: estimation of, in starch products, 19, 698: in food-stuffs, determination of, 19, 183, 347: formation of fat from, in carnivora (abst.), 8, 86: heats of combustion of, 20, 305: influence of, on the putrefaction of albumin (abst.), 8, 230: physiology of, in the animal system (abst.), 6, 159, 233: of the sweet potato (abst.), 12, 351: of wheat, insoluble, 19, 291

Carbolic acid. See Phenol.

Carbon, absorption of chlorine by (abst.), 7, 148: atomic weight of,

18, 212: atomic weight of, a correction, 20, 163: atomic weight of, by combustion of diamond (abst.), 4, 237: behavior of, toward iron at high temperatures (abst.), 8, 72: new combination of, with sulphur and bromine (abst.), 4, 226: and its compounds, chemical action with (abst.), 6, 286: on the condition in which it exists in steel (abst.), 5, 114: gravimetric determination of minute quantities of (abst.), 1, 108: electrolysis of, in ammonia (abst.), 8, 178: in gases evolved by the solution of iron in acids (abst.), 10, 25: an impurity in hydrogen affecting determinations of atomic weight, 12, 276: new mixture for separating, from iron and steel (abst.), 10, 156: pure, for electric light (abst.), 4, 235: the segregation of, in a piece of boiler plate, - - - - - 20, 614

Carbon compounds, brominated (abst.), 5, 93: heats of solution of, 18, 146: measuring heat of combustion of (abst.), 7, 146: relation of molecular structure of, to absorption spectra (abst.), - - - - - 4, 144

Carbon, determination of, in aluminum, 18, 771: in cast iron, 5, 56: (abst.), 1, 88; 6, 193: in iron (abst.), 10, 155: in iron, influence of sulphur on Eggertz' method for (abst.), 10, 115: in pig iron, 18, 1087: in iron and steel, 15, 213; 19, 95: (abst.), 4, 165; 12, 352: in iron and steel, colorimetric (abst.), 1, 371: in iron and steel, gas volumetric (abst.), 10, 68: in iron and steel, standard method for, 15, 526: (combined), in iron and steel, P. 2, 72: in steel, 15, 113, 283; 18, 223: in steel, by combustion in current of air, 15, 114: in steel, by combustion in the wet way, 20, 243: in steel, by Eggertz' method (abst.), - - - - - 1, 271

Carbon, determination of, organic, sources of error in, 20, 510, 528: in volatile compounds (abst.), 9, 220: in the wet way (abst.), 12, 477: in waters, - - - - - 9, 162

Carbon, determinations of, in standard samples of iron and steel, 15, 450

Carbon dioxide, apparatus for preparing (abst.), 9, 175: in atmosphere, normal amount of (abst.), 4, 232: density of, 20, 170: detection of minute quantities of (abst.), 9, 199: hydrate of (abst.), 5, 64: liquid, under regulated pressure (abst.), 6, 25: as a measure of the efficiency of ventilation, 15, 572: occurrence of, in cavities of topaz, 3, 41: reactions of (abst.), 7, 286: reduction of, by phosphorus at ordinary temperatures, 1, 230: reduction of, by phosphorus at ordinary temperatures, correction, 1, 452: solid (abst.), 6, 307: solvent action of solution of, - - - - - 3, 26

Carbon dioxide, determination of (abst.), 12, 354: by absorption 18, 1: by absorption with barium hydroxide, in potash bulbs, 17, 247: apparatus for (abst.), 10, 67: apparatus for, gravimetric, 16, 204: apparatus for, volumetric, 15, 614: in coal gas (abst.), 5, 112: comparison of rapid methods for, 19, 859: by loss of weight, P. 1, 127: in water, by titration, - - - - - 13, 98

Carbon disulphide (abst.), 4, 252: action of bromine on (abst.), 5, 26: action of, on menthol and borneol (abst.), 12, 161: action of, on *p*-nitraniline (abst.), 4, 264: action of phosphonium iodide on

(abst.), 2, 171: action of, on silicon (abst.), 4, 240: detection of, in coal gas, 3, 38: some reactions of (abst.), 7, 286: vapor of, absorbents for (abst.), - - - - - 7, 286

Carbon minerals, analyses of, - - - - - 13, 143

Carbon monoxide, action of, on alkaline hydroxides at high temperatures (abst.), 2, 367: behavior of, with air and moist phosphorus (abst.), 6, 75: comparison of rapid methods for determining, 18, 866: constitution of (abst.), 18, 286: conversion of, into carbon dioxide by nascent oxygen, 5, 78: determination of, by explosion in technical gas analysis, 20, 343: heat of combination of (abst.), 1, 279: and hydrogen, relative affinity of oxygen for (abst.), 1, 164: limits to detection of (abst.), 1, 556: oxidation of, by air over phosphorus at ordinary temperatures, 1, 232: poisoning by, 10, 176: preparation of (abst.), - - - - - 5, 64

Carbon oxydichloride. See Carbonyl chloride.

Carbon oxysulphide, transformation of, into urea and thiourea (abst.), 4, 236

Carbon and silicon, new compounds of (abst.), - - - - - 4, 237

Carbonate, determination of caustic alkali in presence of (abst.), - - - - - 4, 165

Carbonate, double, of potassium and sodium (abst.), - - - - - 10, 77

Carbonates, crystallized, methods for preparation of (abst.), 9, 33: in living plants (abst.), - - - - - 8, 21

Carbonated beverages, poisoning by lead in, - - - - - 11, 99

Carbonic acid, hydrated, composition of (abst.), 4, 236: in water and its effect on lead pipes (abst.), - - - - - 10, 71

Carbonyl chloride, action of, on *o*-diamines (abst.), 12, 228: action of, on diazo-amido compounds (abst.), 4, 175: action of, on glycol-chlorhydrin (abst.), - - - - - 7, 144

Carborundum, - - - - - 15, 411

Carbostyryl (abst.), - - - - - 4, 230

Carbotriphenyltriamine, constitution and synthesis of (abst.), - - - - - 1, 166

Carboxyacrylactic acid and allylsuccinic acid (abst.), - - - - - 5, 69

Carboxylic acids, occurrence of, in coal tar (abst.), - - - - - 7, 249

Carminaphte (of Laurent), method of preparing (abst.), - - - - - 1, 272

Carotin (abst.), - - - - - 8, 204

Carvacrol, occurrence of, in the essential oil of *Satureia hortensis* (abst.), - - - - - 5, 24

Cascara sagrada, the chemistry of, - - - - - 20, 534

Casein, determination of, by precipitation with sulphuric acid (abst.), 8, 61: determination of, study of methods for, 15, 635: sulphur in (abst.), - - - - - 8, 60

Casein and fat, determination of, in feces, 19, 877: 20, 101: determination of, in infant feces, - - - - - 20, 765

Cassava, some products of, - - - - - 15, 78

Castor bean, proteids of, - - - - - 18, 621

Castor oil, presence of a pimelic acid in the oxidation products of (abst.), 8, 110: solid residue from the distillation of, *in vacuo*, 5, 4

Cattle foods, recent progress in analysis of, - - - - - 16, 174

Celestine, reproduction of, by wet process (abst.), - - - - 10, 113
 Cells, living, reducing properties of (abst.), - - - - 4, 176
 Cell-contents of certain plants, researches on (abst.), - - - - 10, 101
 Cellulose, action of solutions of, on polarized light (abst.), 6, 93:
 determination of, 19, 304: formula of (abst.), 2, 173: oxidation of
 (abst.), 5, 92; 6, 197: separation of, from wheat, - - - - 19, 296
 Cement, conversion of lime mud into (abst.), 10, 91: decomposition of,
 by water (abst.), 6, 174: chemical and physical examination of,
 15, 181; 16, 161, 283, 323, 374: detection of adulterations in
 (abst.), - - - - - 6, 290
 Cereals, determination of crude fiber in, - - - - - 19, (39)
 Ceresine and ozokerite from Galicia, - - - - - P. 1, 121
 Ceria, separation from other earths, - - - - - 16, 650
 Cerite metals, on (abst.), - - - - - 5, 113
 Cerium, atomic weight of, 18, 210; 20, 167: (abst.), 6, 306: contribu-
 tions to the chemistry of, 16, 649: separation of, from iron, - - - - 20, 846
 Cerium compounds, contributions to chemistry of (abst.), 4, 203:
 group, specific gravities and atomic volumes, etc. (abst.), 1, 295:
 metals, contributions to chemistry of (abst.), - - - - - 4, 176
 Cerium acid sulphate (abst.), - - - - - 12, 70
 Cesium, atomic weight of (abst.), - - - - - 1, 106
 Cesium fluoride, 18, 57: columbium fluoride, 18, 59: barium ferro-
 cyanide, 20, 33: barium ruthenocyanide, 20, 31: bromoselenate,
 20, 571: ruthenium nitrosochloride, 16, 395: tantalum fluoride,
 18, 59: titanium fluoride, 18, 60: trinitride, - - - - - 20, 227
 Cevadine, chemistry of (abst.), - - - - - 1, 553
 Champagne wines, clarification of (abst.), - - - - - 4, 234
 Charcoal, animal, absorption of sugar by, 1, 509: animal, decomposi-
 tion of salt solutions by (abst.), 1, 95: preparation of, for the
 manufacture of gunpowder (abst.), - - - - - 9, 190
 Charcoal borers, - - - - - P. 2, 104
 Chart, alchemical, - - - - - 13, 293
 Cheese, composition of, P. 1, 2, 63: composition of American cheddar, 15, 605
 Chemical analysis, treatment of precipitates in (abst.), 2, 43: com-
 pounds, a few physical properties of (abst.), 6, 43: dynamics, ex-
 planation of Gladstone and Tribe's law in (abst.), 7, 26: energy,
 15, 421: force, relative intensity of, 12, 292: industry of United
 States, 15, 563: problems of to-day (address by Victor Meyer),
 11, 101: science, immediate work in, 14, 190: societies, early
 American, 19, 717: studies, application of graphic methods in,
 14, 128: terms, spelling and pronunciation of, 14, 63: theory,
 foundations of, - - - - - 15, 430
 Chemical Congress. See Congress of Chemists.
 Chemical literature, international index to, 15, 574: report of com-
 mittee on, 15, 309: report of committee on indexing, 11, 121;
 - - - - - 18, 940; 19, 766
 Chemical nature of compounds, boiling-points a function of (abst.), 12, 234

Chemist, the American (presidential address), - - - - - 14, 331
 Chemists, industrial, education of, - - - - - 15, 481, 627
 Chemistry, experimental, in eighteenth century (notice), 13, 262: industrial, progress in (review), 19, 894: quantitative work for beginners in, 16, 59: teaching of, - - - - - 15, 463
 Chemistry and physics, borderland between (presidential address), 13, 11: connection between (abst.), - - - - - 8, 178
 Chevallot's process for water-proofing (abst.), - - - - - 9, 17
 Chicago Section, meetings of, - - - - - 17, (49), (68)
 Chicken cholera, 2, 214: and virulent diseases (abst.), - - - - - 2, 79
 Chicle, notes upon, - - - - - 1, 50
 Chinese liquor, analysis of a (abst.), - - - - - 7, 243
 Chloracetone, action of, on ethyl acetoacetate (abst.), - - - - - 6, 85
 Chloral, action of chlorine on (abst.), - - - - - 8, 36
 Chloral hydrate (abst.), 1, 401: answer to Berthelot's remarks on (abst.), 1, 403: combination of hydrogen phosphide with (abst.), 8, 199: electrolysis of (abst.), 8, 20: heat of solution of, in water, alcohol, chloroform, and toluene, 18, 156: remarks on paper of Wurtz on (abst.), - - - - - 1, 402
 Chlorates, estimation of, by the zinc copper couple (abst.), - - - - - 10, 26
 Chlorbromal (abst.), - - - - - 4, 269
 Chlorethyl bisulphide, constitution of (abst.), - - - - - 10, 15
 Chlorhydrin, propylene- (abst.), - - - - - 7, 118
 Chlorhydrins, aliphatic, action of thiocyanates on, - - - - - 20, 668
 Chloric and nitric acids, color reactions of, with certain aromatic bodies, - - - - - 19, 156
 Chlordibromacetic acid (abst.), - - - - - 4, 269
 Chlorides, action of heat on, 5, 144: blowpipe reactions for, P. 2, 110: comparative antiseptic value of (abst.), 9, 190: double, molecular volume of (abst.), 6, 232: test for, in the presence of bromides and iodides (abst.), 7, 209: variations of solubility of some, in the presence of hydrochloric acid (abst.), - - - - - 8, 163
 Chlorinated derivatives of ethyl acetate (abst.), - - - - - 10, 17
 Chlorine, absorption of, by carbon and its combination with hydrogen (abst.), 7, 148: action of, on anhydrous chloral (abst.), 8, 36: action of, on certain metals (abst.), 5, 99: action of, on organic compounds containing sulphur (abst.), 6, 133: action of, on phloroglucinol (abst.), 12, 159: action of, on the sulphides of alcoholic radicals (abst.), 10, 16: action of, on sulphonlic compounds (abst.), 4, 263: apparatus for preparing (abst.), 12, 155: behavior of hydrogen dioxide towards (abst.), 2, 60: contributions to knowledge of (abst.), 2, 371: decomposition of aqueous solutions of, in sunlight (abst.), 7, 120: density of, answer to Seelheim's remarks on, 1, 481: density of, at high temperatures, note on, 1, 453: derivatives of the aliphatic series (abst.), 10, 16: detection of free, in hydrochloric acid (abst.), 12, 73: dissociation of (abst.), 1, 310: and hydrochloric acid, influence of the ammonia

soda process on the value of (abst.), 6, 174: the Le Sueur process for production of, 20, 868: loss of, from bleaching-powder (abst.), 10, 90: manufacture of, from magnesium chloride (abst.), 9, 224; 10, 85: presence of, in scapolites (abst.), 1, 391: acetate, non-existence of (abst.), 1, 161: monoxide (abst.), - - - - - 7, 244

Chlorine, determination of, in gases from chemical works (free and combined) (abst.), 4, 161: gravimetric (abst.), 4, 161: in hydrochloric acid (free), 1, 18: (abst.) P 2, 149: indirect (abst.), 4, 161: in presence of bromine and iodine, 18, 688; (abst.), 1, 384; 2, 368; 6, 49: volumetric (abst.), 7, 209: in water, - P. 2, 3; 16, 71

Chlorine, separation of, from bromine (abst.), 7, 178: from iodine, in the dry way (abst.), - - - - - 7, 32

Chlorlactic acid, formation of, from glyceric acid (abst.), - - - - - 1, 289

Chlormalic acid and derivatives (abst.), - - - - - 4, 270

Chlornaphthol and dichlornaphthalene from β -naphtholsulphonic acid (abst.), - - - - - 4, 229

Chlorobromoform (abst.), - - - - - 4, 269

Chlorocaffeine, perhalides of, - - - - - 18, 364

Chloroform from acetone made from acetic acid, 18, 231: and acetone, acid obtained by action of alcoholic potassium hydroxide on (abst.), 9, 102: action of, on β -naphthol (abst.), 4, 241: action of quinoline on (abst.), 5, 66: detection of alcohol in (abst.), 1, 582: preparation of, by electrolysis (abst.), - - - - - 7, 85

Chloronitrides of phosphorus, - - - - - 19, (43)

Chlorophyll (abst.), 2, 90; 7, 141: new coloring-matter from (abst.), 6, 133: preparation of pure (abst.), 6, 89: probable constitution of (abst.), 6, 238: spectroscopic study of (abst.), - - - - - 4, 257

Chlorostannates of rare earths (abst.), - - - - - 1, 278

Chlorosulphonic acid, behavior of, with non-metals and with tin (abst.), 4, 261: preparation of (abst.), - - - - - 5, 126

Chocolate and cocoa, determination of theobromine in (abst.), - - - - - 1, 365

Cholera, formation of ptomaines in (abst.), - - - - - 7, 80

Cholesterin, contributions to our knowledge of (abst.), - - - - - 1, 394

iso-Cholesterin, specific rotation of (abst.), - - - - - 1, 380, 395

Cholic acid, empirical formula of (abst.), - - - - - 10, 37

iso-Cholic acid (abst.), - - - - - 5, 21

Chondrin, on the chemistry of (abst.), - - - - - 1, 397

Chrom ammonium compounds, contributions to the chemistry of (abst.), 2, 290

Chromates, alkaline, titration of (abst.), 4, 165: and dichromates (abst.), 1, 294: influence of, on glue in the light (abst.), 1, 493: normal, detection of, in dichromates (abst.), - - - - - 1, 89

Chrome alums, accommodation of (abst.), 2, 370: iron, analysis of (abst.), 12, 117: iron ore, disintegration of (abst.), 1, 104: ores, determination of chromium in, 17, 327: ores, disintegration and solution of (abst.), - - - - - 1, 558

Chromic acid, combustion of carbohydrates by means of (abst.), 7, 293: free, detection of, in dichromates (abst.), 1, 89: prepara-

tion of crystallized (abst.), - - - - - 9, 2 2
 Chromic anhydride, reaction of, with sulphuric acid (abst.), - - - - - 4, 170
 Chromium, action of hydrogen dioxide on (abst.), 10, 192: electrolysis of pyrophosphate of (abst.), 12, 172: equivalent of (abst.), 6, 127: error in analysis of iron ores due to presence of (abst.), 4, 166: metallic, new process for preparing (abst.), 1, 276: oxidation of the sesquioxide of, and determination of (abst.), - - - - - 6, 136
 Chromium amalgam (abst.), 1, 276: compounds corresponding to potassium ferri- and ferrocyanides (abst.), 7, 140: oxides, action of hydrogen peroxide on (abst.), 8, 162: salts, nature of change from violet to green in solutions of, 20, 484: sulphate, preparation of (abst.), 6, 78: sulphate, crystalline, - - - - - 15, 151
 Chromium black on wool (abst.), - - - - - 1, 290
 Chromium, determination of (abst.), 4, 166; 8, 77: in aluminum alloys, 18, 774: in chrome ore, 17, 327: colorimetric, for small quantities, 20, 454: in iron and steel (abst.), 10, 66: volumetric (abst.), - - - - - 1, 324, 325
 Chrysaniline (abst.), - - - - - 6, 237; 7, 83
 Chrysazine series, anthracene compounds of (abst.), - - - - - 1, 290
 Chrysenene and related hydrocarbons, synthesis of (abst.), - - - - - 12, 160
 Chrysophenol (abst.), - - - - - 6, 237
 Chymosin, active principle of rennet, - - - - - 10, 98
 Cider and vinegar, - - - - - 7, 102
 Cinchona bark, determination of alkaloids in (abst.), 1, 552: new alkaloid from (abst.), - - - - - 4, 168
 Cinchonidine, contributions to the knowledge of (abst.), 2, 184: detection of, in quinine sulphate (abst.), - - - - - 8, 233
 Cinchonine, action of sulphuric acid on, in the presence of oxalic acid (abst.), 10, 83: composition of (abst.), 2, 184: oxidation products of (abst.), 1, 166; 2, 185: researches on optical isomers of (abst.), 10, 80
 Cinchonine chloride, action of phosphorus pentachloride and phosphorus oxychloride on (abst.), - - - - - 2, 227
 Cinchotine, behavior and occurrence of (abst.), - - - - - 4, 267
 Cincinnati Section, meetings of, 17, (25), (27), (31), (34), (42), (48), (65), (72); 18, (5), (33), (60), (68), (72), (93), (126); 19, (13), (18), (20), (24), (32), (39), (65); 20, (6), (24), (46), (63), (81), (107)
 Cinnamic acid, addition products of (abst.), 1, 242: condensation product of, with gallic acid (abst.), 9, 196: on Schwartz's synthesis of (abst.), - - - - - 5, 65
 Cinnamic acid, chloro- (abst.), 5, 22: dinitro- (abst.), - - - - - 5, 242
 Cinnamic acids, brom-, action of two isomeric, with sulphuric acid (abst.), - - - - - 4, 173
 iso-Cinnamic acid present in the alkaloids accompanying cocaine (abst.), - - - - - 12, 161
 Cinnamic aldehyde from pancreatic digestion of fibrin (abst.), - - - - - 2, 368
 Cinnoline derivatives (abst.), - - - - - 5, 239
 Citraconic acid, brom- (abst.), - - - - - 1, 280; 2, 88

Citrate solution, preparation of a neutral, - - - - - 20, 585
 Citrene, action of formic acid on (abst.), - - - - - 10, 113
 Citric acid, detection of (abst.), 7, 180: and its homologues (abst.), 1, 173: in lemon juice (abst.), 10, 195: occurrence of, in seeds of leguminous plants (abst.), 7, 30: in sorghum juice, 15, 144: surface-tension of solutions of, - - - - - 20, 129
 Citric and tartaric acids, on (abst.), - - - - - 5, 231
 Clamp for burette, 16, 719: universal, - - - - - 17, 611
 Clausius-Williamson hypothesis, validity of (abst.), - - - - - 6, 73
 Clay, analysis of (abst.), 9, 35: suspended, precipitation of, by alumnum, ferric, or calcium hydroxides, - - - - - 13, 100
 Coagulation of colloid solutions, on the speed of, - - - - - 20, 375
 Coal, analysis of (abst.), 6, 128: analysis of, preliminary report of committee on, - - - - - 20, 281
 Coal, behavior of nitrogen in, during destructive distillation (abst.), 5, 95: coking of, in the Simon-Carvés ovens, by-products in (abst.), 7, 212: determination of nitrogen in (abst.), 5, 95: determination of sulphur in, P. 1, 97: determination of sulphur in, study of methods for, 20, 630: distillation of (abst.), 10, 45: distillation of, and recovery of hydrocarbons from the gas (abst.), - - - - - 6, 27
 Coal gas, estimation of hydrogen sulphide in, by weight, 4, 177: process for desulphurizing (abst.), - - - - - 9, 223
 Coals, analysis of different varieties of (abst.), 9, 198: determination of heating effects of, - - - - - 17, 843
 Coal tar. See Tar.
 Coal tar colors, effect of, on digestion, - - - - - 18, 1092
 Cobalt, alloys of, with copper (abst.), 7, 285: atomic weight of, 16, 183; 17, 207; 18, 202; 20, 166: decomposition of (abst.), 10, 180: determination of, by precipitation as oxalate (abst.), 1, 327: determination of, volumetric, 20, 173: electrolysis of pyrophosphate of (abst.), 12, 169: test for (abst.), - - - - - 1, 109
 Cobalt amalgam (abst.), 1, 276: chloride, difference in color of hydrates of (abst.), 6, 307: nitrate as an indicator for ferrocyanide, 17, 474
 Cobalt salts, bromopurpleo (abst.), - - - - - 1, 295
 Cobalt, separation of, from aluminum, as oxalate (abst.), 1, 529: from arsenic, by hydrobromic acid gas, 20, 808: from arsenic by hydrochloric acid gas, 18, 1042: from bismuth, electrolytic, 15, 104: from iron, as oxalate (abst.), 1, 529; from nickel (abst.), 4, 166: 7, 250: from zinc (abst.), - - - - - 8, 277; 9, 9
 Cobaltcyanides, preparation of (abst.), - - - - - 1, 272
 Cobaltous chloride, compounds of, with aniline, etc. (abst.), - - - - - 1, 165
 Cocaine, discovery of (abst.), 7, 88: presence of isocinnamic acid in the alkaloids accompanying (abst.), - - - - - 12, 161
d-Cocaine (abst.), - - - - - 12, 164
 Cochineal, fat in (abst.), - - - - - 8, 66
 Cocoa and chocolate, determination of theobromine in (abst.), - - - - - 1, 365
 Cocoanut, the proteids of, - - - - - 18, 621

Cocoanut oil, relation of, to methods of butter analysis, - - - - - 7, 188
 Cod liver oil and vegetable oils, examination of (abst.), - - - - - 10, 70
 Coffee decoctions, solubility of arsenious oxide in, - - - - - P. 1, 2, 56
 Coffee, roasted, examination of (abst.), - - - - - 4, 189
 Cohesion, nature and chemical signification of (abst.), - - - - - 2, 57
 Coke, determination of nitrogen in (abst.), 5, 95: determination of sulphur in (abst.), 10, 155: from petroleum, substances contained in (abst.), - - - - - 2, 435
 Coking coal in the Simon-Carvés ovens, by-products in (abst.), - - - - - 7, 212
 Colchicine, detection of, in toxicological cases (abst.), - - - - - 1, 106
 Colloid solutions, speed of coagulation in, - - - - - 20, 375
 Colophony, methyl alcohol from the dry distillation of (abst.), 5, 123: products of distillation of (abst.), - - - - - 4, 233
 Color, estimation of, by photography (abst.), 10, 86: estimation of, in potable water, 18, 484: estimation of, in water, P. 2, 8: gray, production of, on fibre by oxidation of aromatic amines and di- amines (abst.), - - - - - 8, 231
 Color and color changes, some regularities of, - - - - - P. 1, 128
 Colors, artificial, progress in manufacture and use of 15, 456: azo-, spectra of, 6, 117, 149: from coal tar, influence of, on digestion, 18, 1092: indigo, examination of (abst.), 9, 120: of natural water, measurement of, 18, 264: purple, derived from gold (abst.), - - - - - 7, 76
 Coloration of coal fire by common salt (abst.), - - - - - 10, 179
 Color comparer for estimation of combined carbon in iron and steel, P. 2, 72
 Colorimeter (abst.), 1, 91: for water analysis (abst.), - - - - - 4, 163
 Colorimetric test for copper, improvements in, - - - - - 19, 24
 Colorimetry, source of error in (abst.), - - - - - 1, 379
 Coloring matter from benzylmethylaniline, 7, 40: derived from chlorophyll (abst.), 6, 133: estimation of, in butter and its substitutes, 9, 41: of natural waters, 18, 68: of *Palmella cruenta* (abst.), 1, 403: of Persian berries (abst.), 2, 62: of *Sophora japonica*, etc., 4, 206: in yolk of eggs (abst.), - - - - - 12, 165
 Coloring matters from action of diazo-compounds on phenols, 2, 236: from aromatic nitro substitution products, etc. (abst.), 4, 205: in butter, etc., method of separating, 9, 76, 98: in butter, reactions of, 9, 98: red, determination of, in wines (abst.), - - - - - 4, 191
 Columbian Exposition, chemical notes from - - - - - 15, 250, 312
 Columbium, derivatives of, 18, 38: qualitative reactions of, 18, 50: separation of, from tantalum, - - - - - 18, 48
 Columbium oxide, action of carbon tetrachloride on, 18, 532: action of phosphorus pentachloride on, - - - - - 18, 61
 Columbus Section, meetings of, - - - - - 20, (17), (47)
 Combustion, complete, of bodies combustible with difficulty (abst.), 4, 269: of gunpowder, researches upon (abst.), 1, 399: luminous incomplete, of ether (abst.), 4, 259: under high pressure (abst.), 12, 349
 Combustion furnace, tiles for (abst.), 10, 68: use of calorimetric bomb for, in ultimate analysis (abst.), - - - - - 10, 172

Compound salts, crystallization from saturated solutions of (abst.), 4, 261
 Compressibility of gases, researches on (abst.), - - - - - 1, 172
 Compression of solids (abst.), 6, 38, 190: of solids, sulphides formed by (abst.), - - - - - 6, 190
 Concretions, intestinal, of horses, analysis of, - - - - - 1, 430
 Condensation of nitric acid, - - - - - 17, 576
 Condensations, on (physical and chemical), - - - - - 13, 122
 Condensed milk. See Milk.
 Condenser for low boiling liquids, 19, 398: for extraction apparatus, 20, 965: modified Liebig's (abst.), 5, 97: for water analysis - - - - - 16, 871
 Condenser attachment, new, - - - - - 10, 63
 Condensers, use of aluminum for, - - - - - 19, 153
 Conductivity measurements, reliability of dissociation values determined by, - - - - - 20, 517
 Conflagrations, prevention and extinguishing, - - - - - 17, 137, 251, 361
 Conglutin and vitellin, - - - - - 18, 609
 Congress of Applied Chemistry, Second International, 18, 307, 660, 923:
 Third International, - - - - - 20, 137, 234, 466, 550
 Congress, Chemical Midwinter Fair, at San Francisco, - - - - - 16, 645
 Congress of Chemists, World's, address of welcome, 15, 301: announcements of committee on, 15, 43, 106, 177, 240: closing address before, 16, 867: proceedings of, - - - - - 15, 305
 Congress, National Pure Food and Drug, - - - - - 20, (35)
 Congresses, International Chemical (note), - - - - - 16, 880
 Conhydrine, on the chemistry of (abst.), - - - - - 5, 53
 Constitution of American Chemical Society, - - - - - 12, 184; 20, (51)
 Copper, alloys of, with cobalt (abst.), 7, 285: analysis of, experiments on, 16, 133: analysis of, method for, 16, 66: analysis of refined, 16, 785: assay of, in the wet way, 17, 346: assay of, by iodide method, 18, 458: commercial, examination of (abst.), 4, 167: bar, rational mode of sampling, 19, 245: delicate test for, 1, 525: determination of arsenic in metallic, 4, 167: determination of sulphur in refined, 17, 814: distribution of precious metals and impurities in, 19, 243: electrolysis of pyrophosphate of (abst.), 12, 171: native, identification and quantitative estimation of arsenic, sulphur, phosphorus, etc., in (abst.), 6, 241: normally present in wheat (abst.), 4, 188: reaction of, with sulphuric acid, 17, 904; 18, 251, 942: reagent for (abst.), - - - - - 1, 528
 Copper, reduction, determination of, 19, 305: refining, composition of tank residues in, - - - - - 19, 778
 Copper, phosphor-, analysis of, - - - - - 19, 396
 Copper ammonium compounds, manufacture of (abst.), 6, 139: ammonium oxyferrocyanide (abst.), 1, 388: arsenate, basic (abst.), 8, 164: oxychloride as a paint (abst.), 6, 291: potassium carbonate solution for determination of sugars (abst.), 12, 226: sulphate, solubility of, in the presence of ammonium sulphate (abst.), 8, 34: sulphide, colloidal (abst.), 9, 110: sulphide, pre-

cipitated, composition of (abst.), 1, 332: sulphites, isomery of (abst.), - - - - - 4, 141
 Copper, determination of, P. 2, 140; actual accuracy of, 18, 814: in aluminum, 18, 768: colorimetric, improvements in, 19, 24: as oxide, 2, 146: by titration with thiocyanate (abst.), 1, 323: volumetric method for, - - - - - 4, 35; 19, 940; 20, 610
 Copper separation of, from antimony, electrolytic, 15, 32, 198: from antimony, by hydrobromic acid gas, 20, 804: from arsenic, by hydrobromic acid gas, 20, 805: from arsenic, by hydrochloric acid gas, 18, 1038: from bismuth, by hydrochloric acid gas, 18, 1036: from bismuth (abst.), 5, 244: from cadmium, electrolytic, 15, 102: from cobalt, electrolytic, 15, 103: from cobalt (abst.), 8, 277: from iron, electrolytic, 15, 103: from manganese (abst.), 8, 277: from mercury, electrolytic, 16, 423: from nickel, electrolytic, 15, 103: as oxalate (abst.), 1, 531: from silver, electrolytic, 16, 420: from tin, electrolytic, 15, 197, 198: from zinc, electrolytic, - - - - - 15, 103
 Copper and arsenic left on sprayed fruit, - - - - - 16, 71
 Copper and nitrogen, double iodide of (abst.), - - - - - 6, 34
 Copper-zinc couple, action of, on nitric oxide (abst.), 5, 233: estimation of chlorates by (abst.), - - - - - 10, 26
 Corallin, detection of, in wine (abst.), - - - - - 1, 576
 Corn, examination of Eastern, Western, and Southern, 2, 7: the oil of 20, 948: studies on, at different stages of vegetation (abst.), 5, 120: see also Maize.
 Corylin, a proteid of the walnut and filbert, - - - - - 18, 617
 Cotton for manufacture of gun-cotton, inspection of, - - - - - 17, 783
 Cotton, silk, and wool, absorption of weak reagents by (abst.), - - - - - 5, 98
 Cotton goods, bleaching, etc., of (abst.), 6, 142: printed, microscopic examination of (abst.), - - - - - 5, 125
 Cotton-seed, analyses of, 6, 216: cake, betain in (abst.), 7, 58: cake and meal, digestibility of (abst.), 8, 60: foods, effect on butter from feeding, 13, 134: melitose in (abst.), 7, 30: proteids of, - - - - - 16, 778
 Cotton-seed oil (abst.), 8, 206: an adulterant of tallow (abst.), 10, 86: detection of, in lard (abst.), 10, 115: distinction of, from olive oil (abst.), 4, 192: test for, in lard, (abst.), - - - - - 10, 182
 Council, minutes of meetings of, 16, (1), (13), (15); 17, (21), (27), (29), (37), (43), (45), (67); 18, (35), (57), (65), (71), (97), (119), (123); 19, (8), (15), (19), (21), (27), (33), (41), (55); 20, (1), (16), (19), (27), (43), (60), (69), (75), (85), (91), (99), (103)
 Counter for bacteria, a new, - - - - - 20, 507
 Cow-pea, proteids of, - - - - - 19, 494
 Cream, proteids of, - - - - - 20, 858
 Cream of tartar substitutes, their chemistry and analysis, - - - - - 16, 333
 Creatinine group, compounds of the (abst.), - - - - - 4, 273
 Creatinines, note on stereochemistry of, - - - - - 14, 284
 Cresol, nitroso-*o*- (abst.), - - - - - 7, 55

o-Cresol, phthalein of (abst.), - - - - - 1, 395
 Cresols, azo- and disazo- compounds of (abst.), - - - - - 7, 54
 Creosote oil, estimation of phenol in (abst.), - - - - - 6, 38
 Critical temperature of liquids (abst.), - - - - - 4, 264
 Crotonic acid, decomposition of halogen substitution products of, by
 alkalies (abst.), - - - - - 4, 206
 Crotonic acid, methyl-, contributions to history of (abst.), - - - - - 1, 396
 Crucible, Gooch, use of, as a silver voltameter, 12, 300: improved
 Gooch, 15, 710: porcelain Gooch, - - - - - 13, 105
 Crucibles, graphite, manufacture of, 6, 283; 7, 4: porcelain, on num-
 bering (abst.), - - - - - 6, 99
 Cryptidine, - - - - - 5, 7, 67
 Crystals, force function in (abst.), - - - - - 7, 199
 Crystallization, fractional, 2, 408: from saturated solutions of certain
 compound salts (abst.), 4, 261: water of, specific volume of,
 (abst.), - - - - - 2, 350
 Cubic alum and chrome alum (abst.), - - - - - 2, 370
Cucurbitaceae of Uruguay (abst.), - - - - - 4, 236
 Cumarone of coal tar (abst.), - - - - - 12, 162
 Cumene, synthesis of (abst.), - - - - - 2, 95
 Cumic acid, constitution of (abst.), - - - - - 4, 266
 Cumic aldehyde, synthesis of thymol from (abst.), 4, 205: nitro, and
 its derivatives (abst.), - - - - - 1, 164
 Cuminic acid, synthesis of (abst.), - - - - - 5, 51
 Cuminol. See Cumic aldehyde.
 Cupellation as a lecturer experiment (abst.), 1, 90: spurting in, - - - - - 17, 338
 Cupreine and homoquinine (abst.), - - - - - 7, 247
 Cupric ammonium oxyferrocyanide (abst.), 1, 388: ammonium cor-
 pounds, manufacture and use of (abst.), 6, 139: ammonium sul-
 phate, basic (abst.), 5, 231: compounds, determination of cuprous
 compounds, in presence of (abst.), 4, 167: salts, reduction of, by
 sugars (abst.), 10, 189: sulphide, composition of (abst.), - - - - - 1, 332
 Cupro-manganese, note on, - - - - - 1, 43
 Cuprous chloride, heat of formation of (abst.), 2, 171: compounds,
 determination of, in presence of cupric (abst.), 4, 167: sulphites,
 isomery of (abst.), - - - - - 4, 241
 Curved surfaces, apparatus for delineation of, - - - - - 13, 263
 Cyanamide (abst.), 1, 496: transformation of urea into (abst.), - - - - - 4, 221
 Cyananiline and some of its derivatives (abst.), - - - - - 7, 207
 Cyanate, ethyl (abst.), - - - - - 4, 267
 Cyanates, aromatic, a few reaction of (abst.), 8, 55: ethereal (abst.), 4, 267
 Cyanethine, note on (abst.), - - - - - 1, 497
 Cyanic acid, normal, and its derivatives (abst.), - - - - - 4, 176
 Cyanide, silver, identification of minute quantities of (abst.), - - - - - 5, 245
 Cyanides, manufacture of, 15, 569: and ferrocyanides, manufacture
 of, from trimethylamine (abst.), - - - - - 6, 199
 Cyanogen, action of, on picraminic acid (abst.), 4, 264: action of, on

the toluidines (abst.), 6, 38: direct combination of, with hydrogen and the metals (abst.), 1, 398; 2, 92: and its derivatives, history of manufacture of, 11, 3, 31: determination of, by silver nitrate, 19, 400: heat of formation of (abst.), 2, 171: preparation of, in the wet way (abst.), 7, 172: use of aniline as an absorbent of (abst.), - - - - - 10, 156

Cyanogen chloride, action of, on potassium-pyrrol (abst.), 5, 64: compounds of the aromatic *o*-diamines (abst.), 7, 245: compounds in soda-lyes, estimation of, 1, 108: hydride, solid (abst.), 1, 402: iodide, vapor-density and melting-point of (abst.), - - - - 12, 225

Cyanurate, ethyl (abst.), - - - - - 4, 267

Cyanuric acids, two new (abst.), - - - - - 1, 289

Cyclical law of the elements, - - - - - 20, 927

Dairy products, accuracy in analysis of, - - - - - 15, 579

Dambose and inosite, identity of (abst.), - - - - - 9, 111

Daphnetin (abst.), - - - - - 1, 167

Daturine, contributions to knowledge of (abst.), - - - - - 2, 370

Decompositions, produced by action of aluminum chloride (abst.), 4, 170

Degrâs, - - - - - 16, 535

Dehydrating substances, action of, on acids (abst.), - - - - - 2, 369

Density of gases, determination of (abst.), 4, 176: of liquids, relation of, to heat of vaporization, 17, 969: vapor, determination of, - - 12, 399

Desoxalic acid, constitution of (abst.), - - - - - 2, 291

Detonating submerged nitroglycerol compounds, - - - - - P. 1, 2, 2

Detonation, rate of propagation of, in solid and liquid explosives (abst.), - - - - - 7, 93

Developer, use of quinolusulphonic acid as, - - - - - 13, 159; 14, 155

Dextrin and soluble starch, estimation of, in food-stuffs, - - - - - 19, 191

Dextrins, transformation of glucoses into (abst.), - - - - - 8, 181

Dextrose, crystallized, 4, 11: detection of, in cane-sugar, 1, 2: and inverted sugar, determination of, in presence of saccharose (abst.), 1, 344: dextrose. See also Glucose.

Diacetone, an aromatic (abst.), - - - - - 6, 134

Diacetyl, tetrabrom-, symmetrical (abst.), - - - - - 12, 160

Diallyl, oxidation of, - - - - - 1, 272

Diallylacetic acid, action of hydrobromic acid and bromine on (abst.), 4, 271

Diallyl-*iso*-propylcarbinol (abst.), - - - - - 2, 177

Diamidobenzenes, isomeric, action of sulphuric acid on (abst.), 2, 95

o-Diamidodiphenetol (abst.), - - - - - 1, 495

Diamidoanthraquinone, constitution of (abst.), - - - - - 1, 491

Diamines, aromatic, methods for determining the constitution of (abst.), 7, 175: aromatic, nitroso derivatives of (abst.), 8, 55: aromatic, use of, in dyeing (abst.), 8, 231: behavior of, with nitrous acid (abst.), 6, 162: primary, action of ethyl chloracetate on (abst.), - - - - - 5, 128

o-Diamines, action of carbonyl chloride upon (abst.), 12, 228: aromatic, cyanogen compounds of (abst.), - - - - - 7, 245

Diamond, atomic weight of carbon from combustion of (abst.), 4, 237: combustion of (abst.), 6, 36: note on (abst.), - - - - - 12, 472

Diamonds, presence of, in a pegmatite from Hindustan (abst.), - - - - - 6, 105

Diamylbenzene (abst.), - - - - - 1, 486

Diastase, action of, on starch (abst.), 1, 101: action of, on starch and glycogen (abst.), 1, 173, 273: the chemical nature of, 17, 587; 18, 536: effect of antiseptics on the action of, - - - - - 10, 91

Diazo compounds, on (abst.), 7, 228: action of alcohol on (abst.), 7, 148: action of, on β -naphthylamine (abst.), 8, 22: new coloring-matters from, etc., 2, 236: combination of, with thymenesulphonic acid, 3, 112: experiments on (abst.), 8, 51: researches on (abst.), 12, 232

Diazo derivatives of nitrobenzyl cyanide (abst.), - - - - - 5, 96

Diazo salts, preparation of dry (abst.), - - - - - 12, 475

Diazoamido compounds, action of carbonyl chloride on (abst.), - - - - - 4, 175

Diazoanisoi chloride, action of, on phenols, - - - - - 5, 32, 55

Diazo- β -naphthalene, action of, on phenols, - - - - - 6, 151

Dibenzoylaniline and its isomers (abst.), - - - - - 4, 171

Dibenzoylsuccinate, ethyl (abst.), - - - - - 6, 84

Dibenzoylsuccinic acid, dilactone of (abst.), 6, 84: lactone of (abst.), 6, 84

Dibenzyl, action of chlorine upon (abst.), - - - - - 1, 497

Dibromcapric acid (abst.), - - - - - 1, 292

iso-Dibromcaproic acid, action of water on (abst.), - - - - - 4, 270

Dibromethylene, constitution of (abst.), - - - - - 2, 90

Dicarbonyl group, condensations of compounds containing, with aldehydes and ammonia (abst.), - - - - - 5, 101

Dichloracetate, butyl (abst.), - - - - - 8, 180

Dichloracrylic acid, decomposition by alkalies (abst.), - - - - - 1, 163

Dichloradipic acid, preparation of, from α -dichlorpropionic acid (abst.), 8, 35: properties of (abst.), - - - - - 8, 36

Dichlorazophenol, constitution of (abst.), - - - - - 1, 493

Dichlorhydrin, action of bromine upon (abst.), - - - - - 1, 486

Dichlornaphthalene, conversion of naphthylaminesulphonic acids into (abst.), 10, 42: and chlornaphthol from β -naphtholsulphonic acid (abst.), - - - - - 4, 229

Dichlornaphthoquinone, action of amines on (abst.), - - - - - 4, 265

Dichlorpropionic acid, formation of, from glyceric acid (abst.), - - - - - 1, 289

α -Dichlorpropionic acid, ethoxyacrylic acid from (abst.), 12, 227: preparation of dichloradipic and pyrocinchonic acids from (abst.), 8, 35

Dichromate of aniline (abst.), - - - - - 9, 173

Dichromates, some (abst.), - - - - - 2, 369

Dicinchonine (abst.), - - - - - 7, 82

Didymium, chemistry of, 19, 799: note on (abst.), - - - - - 4, 240

Diethoxymethylene, - - - - - 1, 523

Diethoxyresorcinol, action of nitrous acid on (abst.), - - - - - 1, 161

Diethyl malonate, preparation of, - - - - - 18, 1105

Diethyleneamines, methylated (abst.), - - - - - 2, 223

Diethylnaphthylamine, action of carbon oxychloride on (abst.),

4, 201: action of sulphuric acid on (abst.), 4, 201: preparation of (abst.), - - - - - 4, 200

Differences allowable in metallurgical analyses, - - - - - 18, 35

Diffusion of some organic and inorganic compounds (abst.), - - - - - 5, 22

Digallic acid (abst.), 1, 161: work of Schiff on, - - - - - 20, 42

Digestibility of insoluble carbohydrates of wheat, - - - - - 19, 309, 315

Digestion of albuminoids, influence of tartrates and lactates upon, 12, 394: effect of coal-tar colors, on, 18, 1092: gastric (abst.), 4, 234: influence of alum, etc., upon, 16, 587: peptic, influence of antiseptics on, 19, 889: salivary, behavior of antiseptics toward, 14, 4

Digestive ferments, action of certain bodies on, - - - - - 19, 744

Digitaline, digitaleine, and digitine, estimation of (abst.), - - - - - 6, 42

Dihydroxybenzoic acids and iodosalicylic acids (abst.), - - - - - 5, 29, 59

Dihydroxyfumaric acid, preparation of (abst.), - - - - - 2, 172

Dihydroxytoluenes (abst.), - - - - - 5, 61

Diketones, color reaction for (abst.), 8, 58: preparation of a series of (abst.), - - - - - 10, 14

Dilactones (abst.), - - - - - 4, 271

Dilatometer, differential, and its use on alums (abst.), - - - - - 7, 77

Dilution, influence of, on chemical change (abst.), 2, 345: of liquid reagents by formula, - - - - - 19, 586

Dimethylamine bromoselenate, - - - - - 20, 573

Dimethylamine, reactions of, with metallic solutions (abst.), - - - - - 2, 133

Dimethylaniline, action of cenanthaldehyde and cenanthyl chloride on, in the presence of zinc chloride (abst.), - - - - - 9, 7

Dimethylaniline ferrocyanide, analysis of, - - - - - 17, 929

Dimethylaniline, β -amido-, action of, on aldehyde (abst.), - - - - - 7, 203

Dimethylanthracene hydrate, and diphenylethane, synthesis of (abst.), - - - - - 6, 165, 166

Dimethylazobenzene as an indicator in alkalimetry (abst.), - - - - - 7, 204

Dimethyl- and methyl diacetouamine (abst.), - - - - - 2, 175

Dimethylenemalonate, ethyl (abst.), - - - - - 6, 84

Dimethylenemalonic acid (abst.), - - - - - 6, 84

Dimethylnaphthylamine (abst.), - - - - - 2, 91

Dimethylphenylphosphine, reaction of, on ethylene bromide (abst.), 4, 206

Dimethyl-*m*-toluidine, nitroso-, constitution of (abst.), - - - - - 2, 171

β -Dinaphthylamine, derivatives of (abst.), - - - - - 9, 193

β -Dinaphthylamine, dinitro- (abst.), 6, 237: tetranitro (abst.), - - - - - 6, 237

o-Dinitro compounds (abst.), - - - - - 4, 269

Dinitrobenzoic acid (abst.), - - - - - 2, 369

a-Dinitronaphthalene (abst.), - - - - - 2, 369

Dinitro-*a*-naphthol, amine derivatives of, 19, 927: chlorination of, 19, 929: salts of, - - - - - 19, 923

Dinitrophenol, chlor., and an aniline derivative of *a*-chlordinitrophenol, - - - - - P. 2, III

Dinitro- β -toluidine (abst.), - - - - - 2, 224

iso-Diphenic acid, constitution of (abst.), - - - - - 1, 169

Diphenols (abst.), - - - - - 1, 293
 Diphenyl, action of nitrogen trioxide on, - - - - - 12, 54
 Diphenyl derivatives containing sulphur (abst.), - - - - - 2, 370
 Diphenylacetic acid, synthesis of (abst.), - - - - - 2, 436
 Diphenylamine, action of nitrogen trioxide on, 12, 10: and aniline, application of, in qualitative analysis (abst.), 5, 52: azo derivatives of (abst.), 1, 396: and *p*-ditolylamine, derivatives of (abst.), 5, 24
 Diphenylamine-acrolein, - - - - - 4, 32
 Diphenylarsenic acid, action of, on the animal organism (abst.), - - - - - 1, 159
 Diphenyldiamidonaphthol (abst.), - - - - - 2, 170
 Diphenylketone oxide, preparation of (abst.), 5, 93, 121: some derivatives of (abst.), - - - - - 5, 100
 Diphenylethane, nitration products of (abst.), 8, 54: synthesis of (abst.), 6, 191: and dimethylanthracene hydride, synthesis of (abst.), - - - - - 6, 165, 166
 Diphenylguanidine chloride, action of nitric acid on (abst.), - - - - - 1, 489
 Diphenylmethane, action of bromine on (abst.), - - - - - 2, 366
 Diphenylmethane, brom-, action of ammonia upon (abst.), - - - - - 2, 436
 Diphenylnitrosamine, azo derivatives of (abst.), - - - - - 1, 396
 Di- and triphenylphosphine (abst.), - - - - - 5, 22
 Dipropargyl, heat of combustion of (abst.), - - - - - 4, 229
 β -Dipropylacrylic acid from β -dipropylethylene lactic acid (abst.), - - - - - 7, 83
 Dipropylamine, reactions of, with metallic salts (abst.), - - - - - 8, 201
 β -Dipropylethylene lactic acid, preparation of β -dipropylacrylic acid from (abst.), - - - - - 7, 83
 Dipyridine methylene iodide, 18, 988: trimethylene dibromide, - - - - - 18, 28
 Diquinoleic base (abst.), - - - - - 10, 190
 Directors, meetings of the board of, 3, 97; 17, (33), (37); 18, (1), (25); 19, (6), (15), (41), (57); 20, (96)
 Disazo- and azo-compounds of cresols (abst.), - - - - - 7, 54
 Disease and drinking water, 9, 44: immunity against, - - - - - 15, 419
 Disease germs, chemical products and physiological effects of, - - - - - 13, 61
 Diseases, virulent, and chicken cholera (abst.), - - - - - 2, 79
 Disinfectants, relative effectiveness of, - - - - - P. 1, 24
 Displacements, reciprocal, between oxygen, sulphur, and the halogens, combined with hydrogen (abst.), - - - - - 1, 385
 Dissociation, on Berthelot's formula for phenomena of (abst.), 6, 75: of chlorine, a disclaimer, 1, 381: of elements at high temperatures (review), - - - - - 1, 313
 Dissociation-values determined by conductivity measurements, the reliability of, - - - - - 20, 517
 Distillation, automatic regulator for (abst.), 1, 584: fractional, apparatus for, 16, 160: fractional, apparatus for, under reduced pressure (abst.), 5, 114: fractional, in a current of steam (abst.), 7, 33, 251: fractional, value of different methods of (abst.), 2, 345: of a heterogeneous liquid (abst.), - - - - - 1, 401

Distillations, method for conducting a number of, 16, 150: regulation of pressure in (abst.), - - - - - 1, 250

Disulphotetraphenylenne, - - - - - 13, 270

Disulphoxides, alkyl, synthesis of (abst.), - - - - - 4, 176

Dithionic acid, formation of sulphuric acid during the preparation of (abst.), - - - - - 8, 177

Dithiourethanes, normal (abst.), - - - - - 4, 268

α -Ditolyamine and diphenylamine, derivatives of (abst.), - - - - - 5, 24

Divaleryl, preparation of (abst.), - - - - - 1, 397

Dolomite from York, Pa., - - - - - 15, 543

Dopplerite of Aussee (abst.), - - - - - 5, 63

Drainage, researches on (abst.), - - - - - 10, 12

Dropping flask for standard solutions, - - - - - 16, 156

Dropping glass, new form of (abst.), - - - - - 1, 379

Drying oven, air, 15, 82: for drying in hydrogen, 15, 709: improvement in, - - - - - 19, 349

Drying sensitive organic substances, method of, - - - - - 19, 388

Duboisine (abst.), - - - - - 2, 225

Durene and hexamethylbenzene, chlorination products of (abst.), - - - - - 8, 182

Dyeing and bleaching, on the chemistry of (abst.), 6, 197: of cotton goods, as practised by Lancashire and Yorkshire dyers (abst.), 6, 142: effect of temperature in (abst.), 6, 199: use of aromatic amines and diamines in (abst.), 8, 231: on the use of certain salts of iron and aluminum in (abst.), - - - - - 6, 172

Dyeing properties of anthragallol (abst.), 6, 142: test, accuracy of, 17, 468

Dyes, artificial, progress in manufacture and use of, - - - - - 15, 456

Dye-stuff, blue, from pyrrol (abst.), 6, 161: a new (abst.), 1, 180: new, from *o*-amidophenol (abst.), - - - - - 1, 493

Dye-stuffs, azo (abst.), 4, 173: from coal-tar, effect of, on digestion, 18, 1092: new (abst.), 2, 367: new class of (abst.), 5, 28: from phenol (abst.), 7, 229: resulting from the simultaneous oxidation of β -diamines with monamines (abst.), 6, 289: used in United States, - - - - - 15, 567

Dynamics, chemical, explanation of Gladstone and Tribe's law in (abst.), - - - - - 7, 26

Dynamite, manufacture of, - - - - - 19, 500

Earth metals contained in sarnarskite, study of (abst.), 4, 222: rare, contributions to chemistry of (abst.), - - - - - 4, 169

Earth-nut oil, sensibility of, to heat when electrified (abst.), - - - - - 10, 173

Ebullioscope, modified form of, 18, 1063: studies on the (abst.), - - - - - 1, 572

Edestin (from barley), 17, 545: (from rye kernel), 17, 437: the most common globulin, 18, 621: properties of, 16, 528: a proteid of the hemp, squash, castor bean, etc., - - - - - 18, 621

Editorial, - - - - - 12, 4

Education of industrial chemists, - - - - - 15, 481, 627

Egg substance, quantitative determination of (abst.), - - - - - 12, 176

Eggs, coloring-matter in yolk of (abst.), - - - - - 12, 165

Eggertz' carbon test, influence of sulphur on (abst.) - - - - 10, 115
 Eikosylene (abst.) - - - - 1, 164
 Elaidic and oleic acids, oxidation of, with potassium permanganate (abst.) - - - - 8, 42
 Elaidin reaction (abst.) - - - - 8, 232
 Electric arc light, action of, on gaseous bodies, and use for demonstrations (abst.) - - - - 12, 351
 Electrical furnace (abst.), 18, 924: for 110-volt circuit, - - - - 20, 769
 Electric heating applied to metallurgy, history of, - - - - 18, 287
 Electrical conductivity of dilute salt solutions (abst.) - - - - 6, 125
 Electrical laboratory stove, - - - - 19, 790
 Electricity and camphor motions, connections between, - - - - P. 1, 2, 66
 Electrode, aluminum as an, - - - - 20, 302
 Electrolysis of carbon in ammonia (abst.), 8, 178: of carbon compounds (abst.), 8, 19: new results in (abst.), 2, 43: synthesis of organic compounds by (abst.), 4, 239: unusual case of (abst.), 2, 223: use of, in technical chemical processes, - - - - 16, 49
 Electrolytes, resistance of, method of determining, - - - - 20, 206
 Electrolytic determination of metals, use of pyrophosphate double salts in (abst.), 12, 168: experiments (abst.), 2, 135: reduction of *p*-nitro compounds, 17, 855: separations, 16, 93, 420; 17, 612: separation of metals, notes on, 13, 140: separation of the metals of the second group, 15, 195: stand, a new, 20, 268: stand, a cheap adjustable, - - - - 18, 558
 Electroplating bath, method of maintaining uniform composition of, 15, 274
 Element, new atmospheric, - - - - 16, 719
 Elements, cyclical law of, 20, 927: dissociation of, at high temperatures (abst.), 1, 313: early American arrangement of, 17, 947: in water analysis, modes of combination of (abst.), 1, 336: working hypothesis that they are compound bodies (abst.) - - - - 1, 113
 Elephant's milk, composition of, - - - - 3, 55; 4, 157
 Endowment fund, report of committee on, - - - - 3, 121
 Energy, chemical, - - - - 15, 421
 Eosin, use of, for coloring tomatoes, - - - - 15, 191
 Epichlorhydrin (abst.), 2, 93: action of bromine on (abst.), 2, 364: action of hydrocyanic acid upon (abst.), 1, 160: action of sodium on (abst.), 2, 91: constitution of (abst.) - - - - 2, 91
 Ergot, spectroscopic detection of, in flour (abst.), 1, 340: spectroscopic reactions of (abst.) - - - - 1, 103
 Errors in volumetric analysis due to changes of temperature, correction of, - - - - P. 1, 188
 Erythrol, products of reduction of, by formic acid (abst.) - - - - 6, 133
 Essential oils. See Oils.
 Esters of hydracids, formation of, in the gaseous state (abst.), 1, 172: influence of the isomerism of alcohols and acids in the formation of (abst.), 2, 182: of tribasic formic acid (abst.) - - - - 1, 167
 Esters and ethers of hydroxy acids, boiling-points of (abst.), 1, 290; 2, 174

Ethanediquinolylidine (abst.), - - - - - 12, 232

Ethane, halogen substitution products of (abst.), 1, 246: nomenclature and boiling-points of substitution products containing bromine or chlorine (abst.), - - - - - 1, 248

Ethane diphenyl-, products of nitration of (abst.), 8, 54: synthesis of (abst.), - - - - - 6, 191

Étard's reaction, on (abst.), - - - - - 12, 231

Ether, luminous incomplete combustion of (abst.), - - - - - 4, 259

Ethers and esters of hydroxy acids, boiling-points of (abst.), 1, 290; 2, 174

Ethers of phenylmesitylene carbinol (abst.), - - - - - 8, 53

Etherification of hydrazides in gaseous state (abst.), 1, 172: of hydroxy-acids (abst.), 4, 205: influence of isomerism in (abst.), 2, 182: rôle of auxiliary acids in (abst.), 1, 386: of the unsaturated mono-basic acids (abst.), - - - - - 2, 172

Etherion, a new gas, - - - - - 20, 899

Ethoxyacetone, - - - - - P. 2, 124

Ethoxyacrylic acid from α -dichloropropionic acid (abst.), - - - - - 12, 227

Ethyl acetate, chlorinated derivatives of (abst.), 10, 17: acetate, continuous process for preparation of (abst.), 2, 366: acetoacetate, condensation products of aldehydes with (abst.), 5, 101: acetoacetate, condensation product of phenanthraquinone with (abst.), 5, 92: carbonate, heat of combustion of (abst.), 6, 90: carbonate, new reaction of (abst.), 6, 171: chloracetate, action of, on primary diamines (abst.), 5, 128: chlorocarbonate, action of, on benzene, etc. (abst.), 4, 143: cyanate and cyanurate (abst.), 4, 267: glycocholate (abst.), 1, 289: mustard oil, new formation of (abst.), 2, 221: nitrate, reduction of, by ethyl alcohol (abst.), 2, 434: orthoformate, preparation of (abst.), 1, 167: oxide, combination of, with titanium tetrachloride (abst.), 2, 434: phthalate (abst.), 2, 220: phthalylacetate (abst.), 5, 238: silicate, heat of formation of (abst.), 1, 487: sulphate and acid sulphate (abst.), 1, 492: thioxalate (abst.), - - - - - 5, 236

β -Ethylacetosuccinic ester, decomposition of (abst.), - - - - - 5, 100

Ethylacetamide, halogen derivatives of, - - - - - P. 2, 115

Ethylamine bromoselenate, - - - - - 20, 573

Ethylaniline, compounds of, with naphthoquinone (abst.), - - - - - 5, 19

Ethylbenzene, oxidation of (abst.), 2, 92: synthesis of (abst.), 2, 92; 6, 168

Ethylborneol and active camphenol (abst.), - - - - - 9, 114

Ethyldiacetic acid, detection of, in urine (abst.), - - - - - 1, 254

Ethylsulphonic acid, preparation of (abst.), - - - - - 12, 158

Ethylene, action of, on benzene, in presence of aluminium chloride (abst.), 1, 390: illuminating power of, when burned with other gases (abst.), 6, 46: liquid, for production of low temperatures (abst.), 4, 238: nomenclature and boiling-points of substitution products containing bromine or chlorine (abst.), 1, 248: substitution products containing bromine, or chlorine and

bromine (abst.), 1, 248: union of free hydrogen with (abst.), - 4, 235

Ethylene bromide, action of dimethylphenylphosphine on (abst.), 4, 206: bromide, action of, on ethyl malonate (abst.), 6, 83: bromide, tetranitro- (abst.), 6, 131: chlorhydrin, action of, on pyridine bases and on quinoline (abst.), 4, 272: chlorobromide and some of its compounds (abst.), 5, 93: chlorosulphocyanate (abst.), 2, 134: cyanide and hydrocyanic acid, behavior of, to hydrochloric acid and alcohol (abst.), 5, 123: iodopicrate (abst.); 2, 224

Ethylene, dibrom-, constitution of (abst.), 2, 90: tetranitro-, derivatives of (abst.), 6, 131: tetraphenyl-, preparation of (abst.), - 10, 81

Ethylene series of hydrocarbons, action of oxidizing agents upon (abst.), - - - - - 2, 185

Ethyldene neopropionic acid, behavior with boiling sodium hydroxide solution, - - - - - 17, 1

α -Ethyl- β -methylvalerolactone (abst.), - - - - - 3, 100

Ethylsulphates of polyhydric alcohols and carbohydrates (abst.), - 2, 288

Ethylsulphonic acid, new method of preparing (abst.), - - - - - 12, 158

Ethylsulphonic acid, β -chlor- (abst.), - - - - - 2, 134

ρ -Ethyltoluene, brom-, oxidation of (abst.), - - - - - 1, 284

α -Ethylvalerolactone, α -ethyl- β -methylvalerolactone, and on a decomposition of β -ethylacetosuccinic ester (abst.), - - - - - 5, 100

Ethyl- and methylacetylcyanate of ethyl (abst.), - - - - - 6, 164

Eudiometer, slight modification of Wilkinson's - - - - - 3, 36

Eugenol, derivatives of, - - - - - 19, 825

Eukairite from Rioja, Argentine Republic (abst.), - - - - - 12, 224

Eutexia (abst.), - - - - - 7, 113

Evaporation of ammoniacal solutions, apparatus for (abst.), 9, 220: automatic regulator for (abst.), 1, 584: of liquids, method of accelerating (abst.), 1, 90: and plant transpiration, 20, 469: *in vacuo* (abst.), - - - - - 5, 235

Evigtokite (abst.), - - - - - 5, 97

Excelsin, a globulin from the Brazil nut, - - - - - 18, 621

Exchanges received by the library, 1892, - - - - - 14, 400

Excursions at Cleveland, - - - - - 18, (46)

Expedition, Norwegian North Sea, results of (abst.), - - - - - 1, 496; 2, 289

Experiments. See Lecture experiments.

Expert testimony, - - - - - 16, 273

Explosion pipette, modification of Hinman's, - - - - - 17, 771

Explosion of platinum retort for concentrating sulphuric acid (abst.), 2, 130

Explosions, gaseous, incompleteness of combustion in (abst.), - 10, 179

Explosive gelatine, spontaneous decomposition of, - - - - - 6, 13

Explosives, determinations of the firing points of various, 12, 57: determination of the strength of various, 12, 256: gelatine, 15, 552: manufacture of (abst.), 10, 116: observations on (abst.), 1, 401: relative sensitiveness of, 15, 10: researches upon (abst.), 1, 399: solid and liquid, rate of propagation of detonation in (abst.), - 7, 93

Explosiveness of petroleum oil, - - - - - P, 1, 115

Extraction apparatus, 18, 744; (abst.), 1, 586; 4, 250; 10, 69: automatic, 15, 270: Graftian's (abst.), 10, 162: improved form of, 15, 123: Knorr's, modified form of, 16, 868: mechanical arrangement of, 19, 735: Soxhlet's, modified form of, - - - - - 9, 182

Factors, analytical, table of, - - - - - 18, 903

Fahlberg's saccharin, detection of (abst.), 9, 34: nature of (abst.), 9, 201

Fairfieldite, description of (abst.), - - - - - 1, 392

Fairy rings, contribution to the chemistry of (abst.), - - - - - 5, 102

Faraday's law (abst.), - - - - - 6, 156

Faraday's law and the law discovered by Bouth (abst.), - - - - - 6, 126

Fat, barley, composition of (abst.), 8, 274: bicuhyba (abst.); 8, 42: butter (abst.), 12, 118: butter, and its substitutes, examination of, 8, 155: and casein, determination of, in feces, 19, 877; 20, 101: and casein, determination of, in infant feces, 20, 765: in cochineal (abst.), 8, 66: determination of, in milk, 10, 32; 15, 579: determination of, in milk (abst.), 8, 61: determination of, in milk, optical (abst.), 1, 570: determination of, in milk, comparison of Wanklyn and Adams' methods for, 12, 488: determination of, in oil cake (abst.), 10, 157: determination of, in palm nut meal (abst.), 8, 28: formation of, from carbohydrates in carnivora (abst.), 8, 86: and glycerol, influence of, on secretion of uric acid in man (abst.), 8, 185: and oil, detection of hydrocarbons in (abst.), 8, 86: of porpoise milk (abst.), 8, 184: specific gravity of (abst.), - - - - - 10, 157

Fats, analysis of, comparative results in, 11, 144: analysis, of, new method for, 16, 275: contained in tuberculosis bacilli, 18, 449: determination of, P, 2, 84: determination of glycerol in (abst.), 4, 239: determination of resin in (abst.), 4, 192: determination of stearic acid in, 19, 32: drying of (abst.), 8, 279: examination of (abst.), 8, 83: iodine figure of, Gantter's process for determining, 16, 372: melting-point of (abst.), 8, 86: testing for a yellow azo color in, 20, 110, 889: unsaponifiable, examination of oils containing (abst.), - - - - - 8, 39

Fats and oils, analysis of (abst.), 10, 194: determination of solid fat in, 18, 259: formation of basic salts in the saponification of (abst.), 8, 41: methods of testing, 15, 153: Muter's method for analysis of, 15, 110: quantitative estimation of (abst.), - - - - - 6, 245

Fats and resins, Koettstorfer figure of dark-colored, - - - - - 16, 408

Fats and soaps, determination of rosin in (abst.), - - - - - 8, 205

Fatty acids. See Acids, fatty.

Fatty bodies, influence of, on the putrefaction of albumin (abst.), 8, 230: method for determining fusion and solidification points of (abst.), 8, 65: studies on (abst.), - - - - - 7, 288

Fatty compounds, solubility of mercuric iodide in (abst.), - - - - - 8, 40

Fatty materials in candles, determination of melting-point of, - - - - - 16, 825

Fatty matter in an *Irvingia* from Cochin China (abst.), - - - - - 8, 110

Fatty matters, examination of (abst.), 8, 83: separation of, from

strychnine and morphine (abst.), - - - - - 9, 15

Fatty oils, detection of, in mineral oils (abst.), 8, 39: detection of mineral oil in (abst.), 8, 38: detection of, when mixed with mineral oils (abst.), 7, 226: on the solidification of (abst.), 6, 198: solubility of iodine in (abst.), - - - - - 7, 202

Fatty series. See Aliphatic series.

Feces, determination of fat and casein in, - - - - 19, 877; 20, 101; 20, 765

Feldspars, action of sodium hydroxide and carbonate on (abst.), - - - - 4, 199

Ferment, alcoholic, soluble, non-existence of (abst.), - - - - 1, 403

Ferments, digestive, action of certain bodies on, - - - - 19, 744

Fermentation, action of hydrogen dioxide on (abst.), 4, 239: of beet-root juice (abst.), 2, 91: evolution of free nitrogen in (abst.), 4, 267: of glucose syrups, 16, 808: succinic (abst.), 1, 273: sulphydric (abst.), - - - - - 1, 489

Ferrates, the, - - - - - 17, 760

Ferric alum, speed of reduction of, by sugar, 19, 683: arsenate, crystallized, artificial production of (abst.), 2, 132: chloride, speed of reduction of, by stannous chloride, 16, 314: ethylate and colloidal ferric hydroxide (abst.), 6, 92: hydroxide as a precipitant for suspended clay, 13, 100: hydroxide, notes on (abst.), 5, 99: oxide, action of, on potassium chlorate (abst.), 4, 142: oxide, reduction of, with pulverized zinc (abst.), 1, 96: oxide, separation of, from alumina (abst.), 7, 124: salts, reaction between, and oxalic acid (abst.), 8, 198: salts, zinc, magnesium, and iron as reducing agents with (abst.), 4, 223: sulphate, basic, molecular weight of (abst.), 5, 100: sulphate, an earthy, from Arkansas, 4, 61

Ferricyanides, heat of formation of some (abst.), - - - - - 4, 233

Ferrocyanides, cobalt nitrate as an indicator for, 17, 474: and cyanides, manufacture of, from trimethylamine (abst.), 6, 199: new indicator for, 17, 473: manufacture of, 15, 569: metallic, special law applicable to (abst.), - - - - - 1, 388

Ferrocyanides, barium and calcium, use of organic bases in preparation of, 17, 927: zinc and manganese, - - - - 18, 1100; 19, 542, 547

Ferro-silicon and silico-spiegel, determination of silicon in, - - - - 19, 138

Ferro-tungsten, experiments on a, - - - - - 16, 297

Ferrous oxide, determination of; in silicates (abst.), 1, 85: sulphate, application of, in agriculture and value as plant food (abst.), 7, 54: sulphate, value of, as a manure (abst.), - - - - - 6, 77

Fertilizer, value of ferrous sulphate as a, - - - - - 7, 54

Fertilizer analysis, legislation on, 10, 2: recent methods in, - - - - 15, 217

Fertilizer industry, development and extent of, - - - - - 15, 321

Fertilizers, determination of nitrogen in (abst.), 9, 13: determination of phosphoric acid in (abst.), 6, 241: produced in United States, 15, 564: quick method for estimating phosphoric acid in (abst.), 7, 210

Fever, typhoid, at Mt. Holly, N. J. in 1887, - - - - - 9, 146

Fiber, crude, determination of, in cereals, 19, (39): crude, determination of, in food-stuffs, 19, 196: crude, in sugar-cane, estimation of,

16, 308 : determination of, in bagasse, sources of error in, 18, 462 :
 of wheat, characteristics of, - - - - - 19, 294

Fibrin, decomposition of hydrogen dioxide by (abst.), - - - - - 5, 120

Filbert, proteids of, - - - - - 18, 618

Fillamite, description of (abst.), - - - - - 1, 392

Filter, efficacy of Breyer's "micro-membrane," - - - - - 8, 192

Filter paper, matter soluble in ether in (abst.), 8, 279 : quality of various makes of (abst.), 1, 376 : Swedish, variations in quality of (abst.), 1, 376 : toughened (abst.), - - - - - 7, 211

Filters of asbestos, 4, 248 : 10, 69 : method of folding (abst.), 9, 175 : porous porcelain, efficiency of, 9, 22 : two new, - - - - - 7, 104

Filter-disk, an improved, - - - - - 16, 58

Filtering apparatus with automatic feed, 19, 284 : new, - - - - - 3, 125

Filtering bulb of platinum, - - - - - 8, 17

Filtering siphon, automatic, - - - - - 19, 817

Filtration of potable water (abst.), 6, 140 : rapid (abst.), 6, 49 : use of asbestos in (abst.), - - - - - 10, 69

Fire, chemical methods of preventing and extinguishing, 17, 137, 251, 361

Fire-damp, method for detection of (abst.), - - - - - 1, 367

Fish, putrefaction bases from (abst.), - - - - - 7, 175

Flame, cause of diminishing, in lamps fed with inferior kerosene (abst.), - - - - - 6, 29

Flame reactions of silver, - - - - - P. 1, 2, 33

Flashing point of kerosene, demonstration of (abst.), - - - - - 5, 53

Flask, dropping, new form of, 7, 20 : new calibrated weighing, 19, 198 : weighing, for use as a burette, - - - - - 4, 6

Flasks, official methods for graduating, - - - - - 20, 924

Flavopurpurine, detection of (abst.), 2, 95 : relation of, to anthrapurpurine and isopurpurine, - - - - - 1, 184

Flour, detection of alum in (abst.), 1, 566 : examination of, for alumina and silica (abst.), 1, 110 : physical and chemical analysis of, 6, 56 : wheat, alumina a natural constituent of (abst.), - - - - - 9, 169

Flour and bread, analysis of (abst.), - - - - - 1, 566

Flours, old, presence of alkaloids in (abst.), - - - - - 8, 167

Fluoranthene, constitution of (abst.), - - - - - 1, 169

Fluorene, some derivatives of (abst.), - - - - - 5, 99

Fluorene, *p*-amido-, (abst.), - - - - - 6, 86

Fluorides as agents for softening hard water, 12, 303 : heat of formation of (abst.), 6, 74 : sodium (abst.), 6, 74 : soluble, heat of combination of (abst.), 6, 74 : use of, in manufacture of alcohol, - - - - - 14, 212

Fluorine, detection and determination of (abst.), 7, 295 : determination of, in organic bodies (abst.), 1, 543 : some uranium compounds of (abst.), 5, 97 : volumetric determination of (abst.), - - - - - 1, 113, 539 : 9, 10

Fluorite from York, Pa., - - - - - 15, 543

Fodders, determination of potash and phosphoric acid in, - - - - - 19, 320

Food, canned, occurrence of tin in, - - - - - 13, 200

Food of the future, the synthetic (presidential address), - - - 17, 155
 Foods, cattle, recent progress in analysis of, 16, 174 : detection of
 salicylic acid in (abst.), - - - - - 8, 278
 Force, chemical, relative intensity of, - - - - - 12, 292
 Force function in crystals (abst.), - - - - - 7, 199
 Formaldehyde, preparation of (abst.), 2, 221 : synthesis of polyhydric
 alcohols by means of, - - - - - 15, 704
 Formanilide, nitriles from (abst.), - - - - - 8, 74
 Formic acid, oxidation of, by cupric ammonium solution (abst.),
 1, 490 : products of the reduction of erythrol by (abst.), 6, 133 :
 synthetic preparation of (abst.), 2, 94, 368 : tribasic, esters of
 (abst.), - - - - - 1, 167
 Formulae for mixing solutions (abst.), 6, 43 : structural, of aromatic
 compounds (abst.), - - - - - 1, 169
 Fractional crystallization and isomorphous salts, - - - - - 2, 408
 Fractional distillation, apparatus for, 16, 160 : in current of steam
 (abst.), 7, 251 : *in vacuo*, apparatus for (abst.), 5, 114 : value of
 different methods (abst.), - - - - - 2, 345
 Franklinite, artificial production of (abst.), - - - - - 9, 100
 Freezing-point in thermometers, rise in (abst.), - - - - - 12, 413
 French chalk, use of, for packing and closing leakages (abst.), - - - - - 7, 214
 Friedel-Craft's synthesis of ketones from phenolethers (abst.), - - - - - 12, 227
 Fruit culture, contributions to the chemistry of, - - - - - 1, 423
 Fruit, mineral residues in sprayed, - - - - - 16, 71
 Fuchsine, detection of, in wine (abst.), 1, 574, 575, 576, 578 ; 8, 57 :
 detection and determination of, in wines (abst.), 7, 294 : spectrum
 of (abst.), 1, 578 : see also Rosaniline.
 Fucose from sea weed, an isomer of rhamnose (abst.), - - - - - 12, 476
 Fuel, gaseous (abst.), 6, 26 : for heating gas retorts (abst.), - - - - - 6, 105
 Fulminate, mercury, chemistry of (abst.), 7, 122 : mercury, derivatives of (abst.), 7, 80 : silver, decomposition of, by hydrochloric
 acid (abst.), 6, 90 : silver, Liebig's production of, without nitric
 acid (abst.), 6, 46 : sodium (abst.), - - - - - 7, 201
 Fulminates, constitution of (abst.), 6, 45 : formation and constitution
 of (abst.), 6, 46 : theory of the constitution of (abst.), - - - - - 6, 45
 Fulminuric acid (abst.), - - - - - 7, 248
 Fulminuric acid, brom- and chlor- (abst.), - - - - - 7, 248
 Fumaric acid, action of acetyl chloride on (abst.), 4, 221 : action
 of acetyl chloride and glacial acetic acid on (abst.), 5, 18 : con-
 tributions to the knowledge of (abst.), - - - - - 1, 236
 Fumaric acid, dihydroxy-, preparation of (abst.), - - - - - 2, 172
 Fungi, growth of, in absence of oxygen (abst.), - - - - - 2, 136
 Fungoid growth without oxygen, possibility of (abst.), - - - - - 1, 494
 Fur and wool, origin, structure, composition, etc., (abst.), - - - - - 10, 184
 Furfural contained in fermented liquors, quantity of (abst.), 4, 229 :
 determination of, 19, 306 : in fermented liquids (abst.), 4, 268 :
 note on (abst.), - - - - - 6, 132

Furfural-yielding constituents of plants, 17, 286: constituents of wheat, - - - - - 19, 301

Furfuran derivatives (abst.), - - - - - 9, 214

Furnace, gas assay (abst.), 6, 244: electric, for the 110-volt circuit, 20, 769: gas, with arrangements for oxidation (abst.), - - - - - 1, 585

Fusel oil, alcohols of, 14, 45: Jorissen's reaction for (abst.), 4, 196, 207: limits of, in spirituous liquors (abst.), 9, 17: quantitative determination of, in brandy (abst.), 5, 27, 50: in spirits, index to the literature on the detection of, - - - - - 18, 397

Fusing point: see Melting-point.

Fustic analysis, interpretation of results of, - - - - - 17, 518

Galactin (abst.), - - - - - 4, 231

Galactose and lactose, examination of (abst.), - - - - - 7, 85

Galena from Newburyport, Mass., analysis of, - - - - - 4, 214

Gallic acid, action of phthalic anhydride on (abst.), 4, 244, 296: condensation product of, with cinnamic acid (abst.), 9, 196: test for (abst.), - - - - - 5, 245

Gallium (abst.), 7, 77: atomic weight of (abst.), 1, 320: crystallized oxychloride of (abst.), 4, 233: and indium, alloys of (abst.), 7, 139: separation of (abst.), 4, 237, 238, 239, 240, 242, 273: separation of, from zinc and iron (abst.), 4, 168: specific heat and heat of fusion of (abst.), - - - - - 1, 279

Gallon, the United States, - - - - - 9, 186

Garbage, ignited, analysis of slag from, - - - - - 6, 188

Gas analysis, apparatus for (abst.), 1, 283, 373: apparatus for rapid, 5, 76: determination of hydrogen sulphide in, 20, 696: determination of methane and hydrogen by explosion in, 17, 986: method of, for use in gas works (abst.), 6, 31: modification of Hinman's explosion pipette for, 17, 771: technical, determination of methane, carbon monoxide, and hydrogen by explosion in, - - - - - 20, 343

Gas, apparatus for reducing measured volumes of, to normal conditions (abst.), - - - - - 6, 97

Gas, coal, estimation of hydrogen sulphide and carbon dioxide in (abst.), 5, 112: influence of temperature of distillation on the composition of (abst.), 6, 105: as a labor-saving agent in trade (abst.), 6, 106: method of obtaining benzene from (abst.), 6, 175: process for desulphurizing (abst.), 9, 223: new residual product from (abst.), - - - - - 6, 24

Gas generators, - - - - - 16, 868; 17, 304, 420, 809; 18, 1057; 19, 818

Gas generators, formation of ammonium thiosulphate in, - - - - - 8, 47

Gas, illuminating, determination of benzene in, 16, 697: determination of hydrogen sulphide in 4, 177: manufacture of, from wood, 2, 449

Gas-making by Coopers' lime process (abst.), - - - - - 6, 31

Gas, a new (etherion), - - - - - 20, 899

Gas, a new, in the atmosphere (argon), - - - - - 16, 719

Gas-pressure regulator, an efficient, - - - - - 20, 501

Gas regulator, an improved, 17, 781: a simple form of, - - - - - 18, 511

Gas retorts, heating of, by gaseous fuel (abst.), - - - - - 6, 105

Gases, action of the electric arc light on (abst.), 12, 351 : apparatus for the rapid analysis of mixtures of, 3, 91 : in Bessemer ingot, composition of, 2, 146 : in canned goods, method of collecting and analyzing, 19, 733 : combustible, analysis of (abst.), 1, 372 : condensation of, as a lecture experiment (abst.), 2, 95 : contained in uraninite, 17, 421 : determination of the density of (abst.), 4, 176 : drying of (abst.), 7, 295 ; 10, 67 : electrolytic method of liquefying (abst.), 10, 78 : escaping from chemical works, analysis of (abst.), 4, 161 : evolved during the conversion of grass into hay (abst.), 5, 114 : injury to vegetation by (abst.), 6, 198 : in iron and steel (abst.), 1, 165 : liquefied, for production of low temperatures (abst.), 4, 238 : method for detection of minute quantities of (abst.), 9, 199 : occluded in cast steel (abst.), 6, 172 : produced by bacteria, 18, 157 : researches on the compressibility of (abst.), - - - - - 1, 172

Gaseous explosives, incompleteness of combustion of (abst.), 10, 179

Gaseous fuel (abst.), - - - - - 6, 26

Gasoline vapor, use of, in blast lamp (abst.), - - - - - 1, 91

Gastric digestion (abst.), - - - - - 4, 234

Gastric juice (abst.), - - - - - 4, 242

Gasvolumeter, a new (abst.), - - - - - 12, 175

Gay-Lussite in soda liquors (abst.), 4, 73 : loss of soda by formation of (abst.), - - - - - 4, 74

Gelatin-dynamite, manufacture of, - - - - - 15, 552

Gelignite, manufacture of, - - - - - 15, 552

Gems, specific gravity of, - - - - - 16, 205

Geranium, oil of, detection of adulterations in (abst.), - - - - - 1, 105

Geranium oil, Indian (abst.), - - - - - 12, 234

German silver, analysis of (abst.), - - - - - 10, 64

Germination in certain soils (abst.), - - - - - 7, 25

Germs, disease, chemical products of, etc., - - - - - 13, 61

Germs of microbes, influence of sunlight on (abst.), - - - - - 7, 77

Glass, alkaline reaction of, as a source of error in analysis (abst.), 6, 97 : impervious to gases (abst.), 1, 91 : manufacture of various kinds of (abst.), 1, 172 : scale of fusibility for, 16, 406 : solubility of, in certain reagents (abst.), 4, 219 : used in the manufacture of incandescent electric lamps, analyses of, - - - - - 14, 61

Glass tubing, to cut (abst.), - - - - - 9, 10

Gliadin (from rye kernel), 17, 439 : properties of, - - - - - 16, 525

Globulin, effect of acid on solubility of, in salt solutions, - - - - - 19, 482

Glovers towers, chemical brick for, - - - - - 17, 360

Glucinium, atomic weight of (abst.), 7, 113 : salts of, purification of, 17, 604 : separation of, from iron, - - - - - 17, 688

Gluconic acid, action of hydrobromic acid on (abst.), - - - - - 6, 162

Glucose, acidity of, 17, 402 : anhydrous, detection of, in refined cane-sugar, 5, 41 : ash in, 17, 403 : in blood, determination of (abst.),

1, 350 : in butter, 20, 201 : in cane-sugar, determination of, 1, 2 : commercial, rotary power of, 2, 387 : crystallized, 4, 11 : detection of, in sugar, 2, 111, 428 : determination of, by means of ammoniated Fehling's solution (abst.), 1, 341 : inactive, or neutral sugar (abst.), 2, 364 : new cupric solution for estimation of (abst.), 1, 344 : rotary power of, effect of heating with dilute acids upon, 2, 395 : sweetness of (abst.), 1, 182 : synthesis of (abst.), 12, 157 : use of sulphites in making, - - - - - 17, 281

Glucose syrup, acidity of, 17, 402 : ash in, 17, 403 : detection of, in sugar-house molasses, 3, 87 : fermentation of, 16, 808 : use of sulphites in making, - - - - - 17, 281

Glucoses, transformation of, into dextrines (abst.), - - - - - 8, 181

Glucoside of kola, 19, 77 : tartaric (abst.), - - - - - 6, 132

Glucoside, phenol-, synthesis of (abst.), - - - - - 2, 42

Glucoside sugar of Persian berries (abst.), - - - - - 2, 62

Glue, with chromates, behavior, of, towards light (abst.), - - - - - 1, 493

Glutaric acid, trimethyl-, and tetramethylsuccinic acid (abst.), - - - - - 12, 157

Gluten (abst.), - - - - - 2, 370

Glutenin, properties of, - - - - - 16, 526

Glyceric acid, preparation of (abst.), - - - - - 8, 64

Glyceric aldehyde, (abst.), - - - - - 9, 101

Glycerol, action of ammonium salts on (abst.), 8, 273 : action of nitrous anhydride on (abst.), 5, 233 : arsenic in, 17, 883 : decomposition of tartaric acid in the presence of, at a high temperature (abst.), 8, 110 : examination of, 17, 277 : examination of commercial, 11, 125 : and fat, influence of, on the secretion of uric acid in man (abst.), 8, 185 : occurrence of trimethylene glycol in, 17, 890 : oxidation of, in alkaline solution (abst.), 8, 64 : phorone from (abst.), 4, 176 : test for (abst.), - - - - - 1, 339

Glycerol, determination of (abst.), 8, 27 ; 10, 196 : in aqueous solutions of (abst.), 4, 196 : in fats (abst.), 4, 239 : in oils (abst.), 8, 102, 104 : by oxidation (abst.), 10, 197 : when produced by saponification of fatty oils (abst.), 8, 204 : in soaps, lyes, and concentrated glycerol (abst.), 10, 182 : in sweet wines (abst.), 4, 191 : in wine (abst.), - - - - - 2, 365

Glycerolate, sodium (abst.), - - - - - 8, 184

Glycinin, globulin of the soy bean, - - - - - 20, 423

Glycocol, contained in juice of sugar-cane, 19, 881 ; 20, 133 : new method of making (abst.), - - - - - 1, 390

Glycogen, action of diastase, saliva, and pancreatic juice on (abst.), - - - - - 1, 173, 273

Glycol, combination of aldehydes with (abst.), 9, 172 : presence of, in wine (abst.), - - - - - 4, 242

Glycols and aldehydes, combinations of (abst.), - - - - - 10, 18

Glycolchlorhydrin, action of carbonyl chloride on (abst.), - - - - - 7, 144

Glycolic acid, transformation of glyoxal into (abst.), - - - - - 6, 90

Glycocholic acid, reaction for (abst.), - - - - - 1, 105

Glycollide, - - - - - P. 2, 118
 Glycrrhizine (abst.), - - - - - 2, 180
 Glyoxal-bisulphite of sodium, thermochemical examination of (abst.), 6, 189
 Glyoxal, preparation of (abst.), 6, 89 : transformation of, into glycolic acid (abst.), - - - - - 6, 90
 Glyoxal acid sodium sulphite (abst.), - - - - - 6, 189
 Glyoxalines, some new (abst.), 5, 242 : and oxalines (abst.), - - - - - 5, 19
 Glyoxylic acid, contributions to the history of (abst.), - - - - - 1, 395
 Gneiss of Manhattan Island, analysis of, - - - - - P. 1, 69
 Gold, assay of, by cyanide process, 18, 309 : Cassel-Hinman process for extracting, 18, 451 : in copper materials, actual accuracy of determinations of, 18, 816 : determination of, in alloys (abst.), 1, 99 : loss, of, during scorification assay, 16, 313 : purple colors derived from (abst.), - - - - - 7, 76
 Gold-aluminum alloys, - - - - - 16, 485
 Gold and platinum, separation of, from antimony, arsenic, and tin (abst.), 8, 278 : qualitative separation of, from antimony, arsenic, and tin (abst.), - - - - - 10, 156
 Gold and silver, method of toughening, in the melting crucible, 6, 182, 210
 "Gold from wheat," British patent process, - - - - - 19, (23)
 Gooch crucible, improved form of, 15, 710 : use of, as a silver voltmeter, - - - - - 12, 300
 Graduated glass vessels and areometers, verification of, - - - - - P. 2, 128
 Grape vine, chemistry of, - - - - - P. 2, 35
 Graphic methods, application of, in chemical studies, - - - - - 14, 128
 Graphite, determination of, in minerals (abst.), 7, 123 : determination of, in pig iron, 17, 873 : in pig metal, experiments on the determination of, - - - - - 16, 104
 Graphite crucibles, - - - - - 6, 283
 Grass, gases evolved during conversion of, into hay (abst.), - - - - - 5, 114
 Gravimeter for sugar analysis, - - - - - 16, 677
 Grease, analysis of (abst.), 10, 115 : fuller's, detection of mineral oil in (abst.), 8, 38 ; fuller's, and suint, preparation of soap from (abst.), 8, 87 : and oils, improvements in bleaching or purifying (abst.), - - - - - 8, 43
 Grinding, fine, observations on, - - - - - 6, 229
 Grits, Pennant, composition of (abst.), - - - - - 4, 144
 Guanidine thiocyanate, desulphurization of (abst.), - - - - - 2, 134
 Guanidine, diphenyl-, action of nitric acid on chloride of (abst.), - - - - - 1, 489
 Guinochet's isomeric carballylic acid (abst.), - - - - - 12, 166
 Gum, wood-, and xylose from straw, etc. (abst.), - - - - - 12, 158
 Gum arabic (abst.), - - - - - 4, 174
 Gums of the arabin group, researches on (abst.), - - - - - 6, 87
 Gums and resins, chemical examination of (abst.), - - - - - 10, 157
 Guncotton, decomposition of, in closed vessels (abst.), 1, 399 : early specimen of, 19, (12) : heat of formation of (abst.), 2, 435 : regeneration of the acid residues from the manufacture of (abst.), 9, 38

Gunpowder, composition of modern, 15, 1 : a flashing test for, 6, 7 : preparation of charcoal for the manufacture of (abst.), - - - - - 9, 190

Gymnemic acid (abst.), - - - - - 10, 191

Gypsum from Owasco, N. Y., composition of, - - - - - P. 1, 2, 62

Haematein, new compounds of (abst.), - - - - - 4, 260

Hematosin, action of hydrogen dioxide on (abst.), - - - - - 4, 240

Haematoxylin and brasilin (abst.), - - - - - 7, 60

Halides and halo-thiocyanates of lead, study of, - - - - - 19, 820

Halogen derivatives of ethyl acetamide, - - - - - P. 2, 115

Halogens, determination of, in mixtures of binary compounds, 18, 688 : determination of, by titration with silver nitrate and ammonium sulphocyanate solutions (abst.), 1, 323 : determination of, in volatile organic compounds (abst.), 5, 96 : and nitrogen, analysis of organic substances containing (abst.), 1, 337 : organic compounds containing, analysis of (abst.), 1, 254 : and oxygen, relative affinities of (abst.), 1, 280 : oxygen, and sulphur, combined with hydrogen, reciprocal displacements of (abst.), 1, 385 : Volhard's method for determination of (abst.), - - - - - 1, 535

Haloid acids, action of gaseous, on nitrates, phosphates arsenates and vanadates, - - - - - 17, 735

Haloid derivatives of sulphur, relative activity of (abst.), - - - - - 8, 164

Hardness, scale of, for glass, - - - - - 16, 406

Hay, gases evolved during the conversion of grass into (abst.), - - - - - 5, 114

Haydenite (abst.), - - - - - 6, 158

Hazelnut, proteids of, - - - - - 18, 618

Heat of bromination of oils, determination of, 18, 378 : of combination of carbon monoxide (abst.), 1, 279 : of combination of soluble fluorides (abst.), 6, 74 : compiled data on the action of, on metallic salts, 5, 135 : disengaged by compression of solid bodies (abst.), 6, 190 : evolved on mixing anhydrous sodium sulphate with water (abst.), 1, 395 : of hydration of salts (abst.), 6, 189 : of transformation of allotropic forms of tellurium (abst.), 10, 10 : of transformation of hydroxybenzoic acids (abst.), 8, 22 : of vaporization, relation of, to density and boiling-point, 17, 969 : waste, attempt to utilize, by Perkin's pipes (abst.), - - - - - 6, 106

Heat of combustion of alcohols and acids of the aliphatic series (abst.), 8, 82 : of benzene, dipropargyl and acetylene, constitution of benzene (abst.), 4, 229 : of carbon and of organic compounds, method of measuring (abst.), 7, 146 : of cereals and cereal products, 20, 304 : of certain amines (abst.), 7, 289 : of fatty acids (abst.), 8, 83 : of fatty acids and their derivatives (abst.), 8, 183 : of some ketones and of methyl and ethyl carbonates (abst.), 6, 90 : and refraction, relations of (abst.), 4, 176 : of some organic compounds (abst.), 10, 15 : of sugars and solid hydrocarbons (abst.), - - - - - 9, 112

Heat of formation of ammonia (abst.), 2, 433 : of cuprous chloride (abst.), 2, 171 : of cyanogen (abst.), 2, 171 : of ethyl silicate (abst.), 1, 487 : of fluorides (abst.), 6, 74 : of fluoride, chloride,

and oxychlorides of antimony (abst.), 6, 157 : of gun-cotton and pyroxylin (abst.), 2, 435 : of hydroferricyanic acid (abst.), 4, 231, 233 : of hydrogen phosphide hydrochloride and hydrobromide (abst.), 2, 89 : of hydrogen silicide (abst.), 1, 487 : of hydrotelluric acid (abst.), 10, 10 : of hydroxybenzoic acids (abst.), 8, 22 : of nitrogen oxides (abst.), 2, 433 : of some oxychlorides and oxybromides of mercury (abst.), 6, 127 : of persulphuric acid (abst.), 2, 363 : of phosphonium chloride and bromide (abst.), - 2, 89

Heat of neutralization of hydrofluoric acid (abst.), 6, 37 : of hydroxybenzoic acids (abst.), 8, 21 : of polyatomic phenols (abst.), - 7, 119

Heat of solution of some carbon compounds, 18, 146 : of magnesium sulphate (abst.), 7, 52 : of mannitol, 18, 156 : of potassium and lithium sulphates (abst.), - - - - - 7, 52

Heat-effect of coals, determination of, - - - - - 17, 843

Heating, electric, applied to metallurgy, history of, - - - - 18, 287

Heating test tubes, apparatus for, - - - - - 19, 286

Helicin, synthesis of (abst.), - - - - - 2, 42

Helium, 17, 421 : atomic weight of, 18, 211 : liquefaction of (note), 20, 466

Hematites, occurrence of vanadium in, - - - - - P. 1, 84

Hemicellulose, hydrolysis of, 19, 293 : preparation of, 19, 292 : preparation of osazone of, 19, 293 : estimation of, in food-stuffs, - 19, 193

Heptane from *Pinus Sabiniana* (abst.), 1, 286 : of *Pinus Sabiniana*, heptylene from, - - - - - 4, 22

Heptylacetic acid, and some salts of, - - - - - 5, 13

Heptylene, from heptane of *Pinus Sabiniana*, - - - - - 4, 22

Heptylene bromide, action of alcoholic potash on (abst.), - - - - 4, 254

Heptylmalonic acid, and some salts of, - - - - - 5, 10

Hesperidine and isohesperidine, sugars of (abst.), - - - - - 10, 79

Hexamethylbenzene and durene, chlorination products of (abst.), 8, 182

Hexylamine, a new (abst.), - - - - - 12, 155

Hexyl alcohol, a new (abst.), - - - - - 12, 155

Hexylenes from tertiary hexyl alcohols, and their polymerization products (abst.), - - - - - 1, 251

Hides, depilation of (abst.), - - - - - 8, 97

Hippuric acid, source of, in urine of herbivorous animals (abst.), - - - - - 1, 493 ; 2, 138

Hofmanu medal, - - - - - 6, 114

Homoquinine and cupreine (abst.), - - - - - 7, 247

Honey from the aphis or plant louse, 14, 350 : estimation of levulose in, 18, 81, 189 : poisonous, - - - - - 19, (10)

Hop bitters, precipitation of (abst.), - - - - - 9, 176

Hop substitutes in beer, detection of (abst.), - - - - - 9, 220

Hops, bitter principles of (abst.), - - - - - 8, 97

Hordein, a proteid from barley, - - - - - 17, 562

Horse bean, proteids of the, - - - - - 20, 393, 410

Human system, elimination of antimony from, - - - - - P. 2, 142

Humates and soil fertility, - - - - - 20, 861

Humite minerals, examination of (abst.) - - - - - 7, 226

Humus, composition of, 19, 738 : in soils, on the Grandjeau method for determination of, - - - - - 16, 210

Hydracids, decomposition of, by metals (abst.) - - - - - 1, 384

Hydrastine, soluble compound of, with monocalcium phosphate, 19, 838

Hydrates of zinc chloride (abst.) - - - - - 8, 162

Hydrazine (abst.), 4, 240 : from aldehyde-ammonia (abst.), 12, 165 : Curtius', 10, 164 : compounds of, with ketones (abst.) - - - - - 5, 239

Hydrazobenzene and benzidine (abst.) - - - - - 7, 59

Hydrazoic acid (abst.) - - - - - 12, 473

Hydrindonaphthene (abst.), 6, 87 : derivatives of (abst.) - - - - - 6, 160

Hydriodic acid, preparation of (abst.) - - - - - 10, 77

Hydrobromic acid, preparation of pure (abst.), 8, 81 : present methods of preparing, with a process for preparing it from zinc bromide and sulphuric acid (abst.), 6, 32 : gas, separations of metals by means of, - - - - - 20, 797

Hydrobromic and nitric acids, conversion of sulphides into sulphates by means of (abst.) - - - - - 6, 33

Hydrocarbon, new (benzylmesitylene) (abst.) - - - - - 5, 121

Hydrocarbon radicals, bivalent, metallic compounds containing (abst.), 4, 258

Hydrocarbons of the acetylene group, action of, on mercuric oxide and salts (abst.), 6, 93 : acetylene, silver nitrate as a reagent for (abst.), 10, 87 : action of ammonia on the di- and tri-halogen substitution products of (abst.), 12, 228 : of American petroleum (abst.), 1, 384 : aromatic, color reactions of, with antimony and bismuth trichlorides (abst.), 1, 544 : aromatic, oxidation of substitution products of (abst.), 1, 115, 283 ; 2, 221 : association of, with rock salt in nature (abst.), 10, 75 : chrysene and related, synthesis of (abst.), 12, 160 : decomposing action exercised by aluminum chloride on some (abst.), 7, 142 : of the ethylene series, action of oxidizing agents upon (abst.), 2, 185 : in fat and oil, detection of (abst.), 8, 86 : and higher alcohols obtained from American petroleum (abst.), 6, 95 : and hydrogen, purified, products of burning, in pure air, 6, 17 : illuminating power of (abst.), 7, 213 : recovery of, from coal gas (abst.), 6, 27 : solid, and sugars, heat of combustion of (abst.), 9, 112 : unsaturated, formation of, from addition products of unsaturated acids (abst.) - - - - - 1, 246

Hydrocarbostyrene, homologues of, synthesis of (abst.) - - - - - 2, 170

Hydrocellulose, transformation of, into friable pyroxylins (abst.) - - - - - 1, 400

Hydrochinone. See Quinol.

Hydrochloric acid, action of, upon amidoazo-compounds (abst.), 7, 86 : action of, on sodium vanadate, 16, 578 : and chlorine, influence of the ammonia soda process on the value of (abst.), 6, 174 : combinations of zinc chloride with (abst.), 8, 163 : detection of free chlorine in (abst.), 12, 73 : solubility of some chlorides in the presence of (abst.), 8, 163 : titration of, for chlorine, P. 2, 149 ; 1, 18 : gas, separations of metals by means of, - - - - - 18, 1029

Hydrocinchonidine, behavior and occurrence of (abst.), - - - 4, 267

Hydrocinnamic acid, formation of, in pancreatic digestion (abst.), 1, 166: series, aldehydes of (abst.), 12, 231: amido-, note on (abst.), 1, 243

Hydrocyanic acid, action of, on epichlorhydrin (abst.), 1, 160: action of haloid acids on (abst.), 4, 221: combinations of, with hydrochloric and hydrobromic acids (abst.), 5, 67: and ethylene cyanide, behavior of, with hydrochloric acid and alcohol (abst.), 5, 123: formation of, by oxidation of thialdine (abst.), - - - 1, 555

Hydroferricyanic acid (abst.), 4, 232: heat of formation of (abst.), 4, 231, 233

Hydroferrocyanic acid (abst.), - - - - - 4, 231

Hydrofluoric acid, 18, 415: action of, on silica and silicates, 8, 210: heat of neutralization of, with alkalies and alkaline earths (abst.), 6, 37: use of, in determining manganese in iron and ores, 20, 504: occurrence of, in hydrogen peroxide, - - - - - 17, 718

Hydrogen, carbon an impurity in, affecting determinations of atomic weight, 12, 276: density of, 16, 188; 18, 198: determination of, by explosion, in technical gas analysis, 20, 343: fractional combustion of, in gaseous mixtures (abst.), 1, 372: free, union of, with ethylene (abst.), 4, 235: in gaseous mixtures, determination of, by absorption (abst.), 1, 371: inaccuracies in the determination of, by combustion, 20, 510: new lines in the spectrum of (abst.), 2, 226: liquefaction of, 20, 466: (abst.), 6, 157: occlusion of, by zinc dust (abst.), 7, 113: new process for producing (abst.), 8, 59: source of, occluded by zinc (abst.), - - - - - 7, 286

Hydrogen and carbon monoxide, relative affinity of oxygen for (abst.), 1, 164: and hydrocarbons, purified, products of burning in pure air, 6, 17: and methane in the atmosphere, 17, 801: and methane, determination of, by explosion, - - - - - 17, 986

Hydrogen arsenide, behavior of, towards potassium hydroxide (abst.), - - - - - 12, 353, 477

Hydrogen dioxide, action of, on coloring-matter of blood, and on haematosin (abst.), 4, 240: action of, on fermentation (abst.), 4, 239: action of, on manganese and lead dioxides (abst.), 2, 51: action of, on the oxides of chromium (abst.), 8, 162: action of, on the oxides of thallium (abst.), 2, 50: and ammonium nitrite, production of, in burning hydrogen and hydrocarbons in air, 6, 17: some analytical methods which employ, 18, 918: application of, in quantitative analysis, 20, 513: behavior of, towards chlorine (abst.), 2, 60: behavior of, towards the galvanic current (abst.), 2, 181: behavior of, towards potassium iodide (abst.), 1, 250: constitution of (abst.), 18, 283: decomposition of, by fibrin (abst.), 5, 120: decomposition of, in presence of alkalies (abst.), 2, 365: electrolysis of (abst.), 4, 240: estimation of (abst.), 1, 321: estimation of titanium by, 13, 210: fluorine as an impurity in, 17, 718: manufacture and applications of, 12, 64: oxidation by means of (abst.), 9, 192: and ozone (abst.), 2, 34, 59, 147: and ozone, both produced by action of air on moist phosphorus, 3, 5: reaction of,

with potassium permanganate, 11, 94 : as a reagent in analysis (abst.), 1, 335 : use of, in analysis of iron and steel, 15, 115 : use of, for the determination of the metals of the iron family (abst.), 10, 192, 192

Hydrogen phosphide. See *Phosphine*.

Hydrogen silicide, heat of formation of (abst.), - - - - - 1, 487

Hydrogen sulphide, action of, on arsenic acid (abst.), 10, 11, 11 : action of, on cupric salts (abst.), 1, 332 : action of, on nickel chloride (abst.), 4, 240 : action of, on potassium tetra- and pentathionate (abst.), 4, 224 : behavior of, towards alkaline solutions of aluminum hydroxide (abst.), 1, 163, 334 : behavior of nitro-compounds towards (abst.), 2, 178 : estimation of, in coal gas (abst.), 4, 177 ; 5, 112 : generation of (abst.), 10, 65 : hydrate of (abst.), 4, 242 : magnesium hydrosulphide as a source of (abst.), 6, 311 : note on, 3, 30 : occurrence and estimation of, in natural gas, 20, 696 : preparation of (abst.), 1, 586 : preparation of, for judiciary chemical investigations (abst.), 1, 293 : preparation of, in toxicological investigations (abst.), 1, 378, 393 : substitute for, 17, 338 : use of, in the dry way (abst.), - - - - - 1, 489, 536

Hydrogen sulphide generator, - - - - - 16, 48, 63, 868 ; 17, 420

Hydrolysis of starch by acids, investigation of, - - - - - 18, 869

Hydrometers, standardizing of, 9, 156 : official methods for verifying, 20, 923

Hydronitric acid, on the salts of, - - - - - 20, 225

Hydroquinidine, behavior and occurrence of (abst.), - - - - - 4, 267

Hydroquinone. See *Quinol*.

Hydrosorbic and sorbic acids, structural formula of (abst.), - - - - - 2, 173

Hydrotelluric acid, heat of formation of (abst.), - - - - - 10, 10

Hydroxyacids, boiling-points of esters and ethers of (abst.), 1, 290 ; 2, 174 : etherification of (abst.), - - - - - 4, 205

Hydroxyacrylic acid (abst.), - - - - - 2, 226

Hydroxybenzoic acids, heat of neutralization of (abst.), 8, 21 : heat of formation and transformation of (abst.), - - - - - 8, 22

β -Hydroxybutyric acid in diabetic urine (abst.), 7, 177 : levorotary, in the blood of a diabetic patient (abst.), - - - - - 9, 113

Hydroxides, alkaline (abst.), - - - - - 7, 283

Hydroxylamine (abst.), 5, 232 : action of, upon imido ethers and amidines (abst.), 6, 236 : action of, on nitriles (abst.), 6, 160 : reactions of, contributions to knowledge of (abst.), 5, 126 : volumetric determination of (abst.), - - - - - 1, 346

Hydroxylamine hydrochloride (abst.), - - - - - 5, 62

Hydroxymethylanthraquinone (abst.), - - - - - 5, 240

Hydroxypropylmalonic acid and its lactone (abst.), - - - - - 4, 270

α -Hydroxyquinoline (abst.), - - - - - 5, 19

β -Hydroxysalicylic acid (2,5-dihydroxybenzoic acid) (abst.), - - - - - 1, 495

Hydroxyvaleric acid from allyldimethylcarbinol (abst.), - - - - - 2, 178

Hyoscyamine (abst.), - - - - - 2, 225

Hypobromite solution, stability of, and its use for the titration of oils, etc. (abst.), - - - - - 6, 99

Hypochlorites, action of, on urea (abst.) - - - - - 1, 101
 Hypochlorous acid, decomposition of solutions of, in sunlight (abst.), 7, 120
 Hyponitric acid, determination of, in nitric and sulphuric acids,
 P. 2, 149 : titration of, in nitric and sulphuric acids, - - - - - 1, 18
 Hyponitric anhydride, action of, on organic bodies - - - - - 2, 277, 416
 Hyponitrites (abst.), - - - - - 6, 75
 Hyposulphites; hyposulphurous acids. See Thiosulphates; Thiosulphuric acid.
 Hyposulphuric acid, composition and basicity of (abst.), - - - - - 1, 497
 Hypoxanthine, question as to production of, from certain albuminoids
 (abst.), - - - - - 2, 224
 Hypoxanthine and adenine (abst.), - - - - - 12, 161
 Ice, artificial, manufacture of, - - - - - P. 1, 2, 74
Ilex cassine, analysis of the leaves of, - - - - - 7, 100
 Illuminating apparatus, - - - - - 17, 496
 Illuminating power of ethylene when burned with other gases (abst.),
 6, 46 : of hydrocarbons (abst.), 7, 213 : of methane (abst.), - - - - - 7, 213
 Imides, conversion of nitriles into (abst.), - - - - - 5, 123
 Imido-ethers, action of phenylhydrazine upon (abst.), 6, 235 : and
 amidines, action of hydroxylamine on (abst.), - - - - - 6, 236
 Inactose or neutral sugar (abst.), - - - - - 10, 16
 Index, international, to chemical literature, 15, 574 : to literature of
 stereochemistry, - - - - - 14, 241
 Indexing chemical literature, report of committee on, 11, 121 ; 18, 940 ; 19, 766
 Indicator, new, for acidimetry (abst.), 4, 166 : in alkalimetry, di-
 methylazobenzene as (abst.), 7, 204 : new, for alkalimetry (abst.),
 4, 166 : to detect acid nature of weak acids (abst.), 8, 79 : for
 neutrality (abst.), - - - - - 5, 245
 Indicators, behavior of the alkaline phosphates towards (abst.), 5, 53:
 a study of, 17, 822 : use of litmus, rosolic acid, methyl-orange,
 phenacetolin, and phenolphthalein as (abst.), - - - - - 6, 49, 242
 Indigo, artificial, preparation of, 4, 81 : derivatives of, 4, 81 : deter-
 mination of, on the fibre (abst.), 9, 16 : determination of indigotin
 in, 6, 185 : molecular weight of (abst.), 1, 254 : natural, printing
 of, on calico (abst.), 6, 104 : process for extraction of indigotin
 from, 12, 302 : quantitative spectroscopic examination of pure
 (abst.), 6, 97 : structure of (abst.), 6, 135 : synthesis of, from
 monobromacetanilide (abst.), 12, 163 : testing, methods of, 7, 16 :
 testing, remarks on the methods of (abst.), - - - - - 7, 211
 Indigo blue, preparation of, from *o*-nitrobenzaldehyde (abst.), 5, 63 :
 colors, examination of (abst.), 9, 120 : group, compounds of
 (abst.), - - - - - 4, 175 ; 5, 21
 Indigodicarboxylic acid (abst.), - - - - - 8, 51
 Indigotin, commercial determination of, 10, 178 : extraction of, from
 indigo (abst.), 12, 302 : methods of determining, - - - - - 13, 32
 Indirect analysis, - - - - - 17, 466 ; 18, 182
 Indophenols, on (abst.), - - - - - 6, 82
 Indium and gallium, alloys of (abst.), - - - - - 7, 139

Indium in tungsten minerals, - - - - - 20, 811
 Induline group, researches on (abst.), - - - - - 5, 96
 Indulines, on (abst.), - - - - - 6, 81
 Industrial chemistry, review of, 4, 72 : review of recent progress in, 19, 894
 Industrial chemists, education of, - - - - - 15, 627
 Ink, writing, action of bleaching agents upon (abst.), - - - - - 9, 224
 Inosite (abst.), 9, 103 : and dambose, identity of (abst.), - - - - - 9, 111
 Insect powder, active principle of (abst.), - - - - - 1, 390
 Intensity, relative, of chemical force, - - - - - 12, 292
 International Chemical Congresses, committee of conference on, - - - - - 16, 880
 International standards for the analysis of iron and steel, work of committee on, - - - - - 16, 140, 286
 Inversion of sugar by salts, - - - - - 18, 120, 693
 Iodide coatings and sublimates (abst.), - - - - - 10, 26
 Iodide, allyl, preparation of (abst.), - - - - - 9, 100
 Iodides, action of heat on, 5, 155 : alkyl, note on, 13, 144 : blowpipe reactions for, P. 2, 110 : decomposition of, under influence of actinism, 2, 270 : influence of light on the decomposition of, 1, 65 : soluble, action of light on, - - - - - 2, 249
 Iodimetric studies (abst.), - - - - - 9, 33
 Iodimetry, founded upon use of permanent standard solutions (abst.), 1, 490
 Iodine, action of, on naphthalene, at high temperatures (abst.). 4, 232 : action of, on potassium selenocyanate (abst.), 6, 34 : action of, on silver salts of some acids of aromatic series (abst.), 4, 264 : action of, on stannous chloride, 19, 515 : behavior of, at high temperatures (abst.), 2, 371 : behavior of silver haloid salts towards (abst.), 5, 245 : calculation for making standard solution of, for sulphur determinations, 19, 261 : compounds of metallic hydroxides with, 19, 333 : determination of (abst.), 1, 490 ; 9, 33 ; 10, 27 : determination of, in kelp (abst.), 1, 563 : extraction of, from marine plants (abst.), 2, 434 : molecular weight of, in solution (abst.), 10, 155 : oxidation of, in the process of nitrification (abst.), 7, 287 : recovery of, from organic iodide residues (abst.), 5, 232 : separation of, from chlorine in the dry way (abst.), 7, 32 : solubility of, in fatty oils (abst.), - - - - - 7, 202
 Iodine acetate, non-existence of (abst.), 1, 161 : trichloride, specific gravity of (abst.), - - - - - 1, 90
 Iodine solution, standard, a correction, 16, 112 : standard, preparation of, 16, 431 : standardizing (abst.), - - - - - 8, 200
 Iodine, chlorine, and bromine, determination of, in mixtures, 18, 688 : (abst.), 6, 49 : and separation of (abst.), - - - - - 1, 384
 Iodoform, action of quinoline on (abst.), 5, 66 : formation of acetylene from (abst.), 6, 37 : manufacture of (abst.), 10, 189 : preparation of, by electrolysis (abst.), - - - - - 7, 85
 Iodoform, methyl- (abst.), - - - - - 10, 114
 Iodomercurates of atropine, - - - - - 20, 331
 Iodostannous acid, - - - - - 19, 851

Iretol, 16, 847 : properties and reactions of, 16, 849

Iridin, the glucoside of iris root, 15, 351, 400 ; 16, 847 : constitution of, 16, 856

Iridium, atomic weight of (abst.), 1, 320 : electro-deposition of, 15, 274

Irigenin from iris root, 15, 353 : constitution of, 16, 856 : derivatives of, 15, 400

Iron, action of hydrogen peroxide on (abst.), 10, 193 : alloy of, with tungsten, 19, 110 : amalgamation of, P. 1, 49 : behavior of carbon toward, at high temperatures (abst.), 8, 72 : carbon in the gases evolved by solution of (abst.), 10, 25 : cast, influence of silicon on the heat of solution of, 20, 690 : chrome, analysis of (abst.), 12, 117 : detection of, by means of salicylic acid (abst.), 1, 335 : electrolysis of pyrophosphate of (abst.), 12, 170 : gases enclosed in (abst.), 1, 165 : influence of silicon on the properties of (abst.), 10, 159 : mixture for separating carbon from (abst.), 10, 156 : oxidized, from an old condenser, analysis of (abst.), 4, 219 : pig, standard samples of (note), 20, 988 : rail, analysis of an old, 19, 9 : reduction of, by hydrogen (abst.), 1, 401 : reduction of, by zinc dust (abst.), 1, 96 : some peculiar forms of, 19, 108

Iron amalgam (abst.), 1, 276 : phosphide and phosphate, analytical properties of, 16, 477 : salts useful in dyeing (abst.), 6, 172 : silicides, 17, 923

Iron analysis, determination of carbon, in iron, 18, 1087 : (abst.), 10, 155 : in cast iron, 5, 56 : (abst.), 1, 88 ; 6, 193 : in iron and steel, 15, 213, 450 : (abst.), 4, 165 ; 12, 352 : colorimetric (abst.), 1, 371 : gas-volumetric (abst.), 10, 68 : determination of combined carbon, in iron and steel, P. 2, 72 : determination of chromium, in iron and steel (abst.), 10, 66 : determination of manganese in iron alloys (abst.), 1, 83 : in cast iron and spiegel (abst.), 6, 242 : determination of phosphorus, in iron, P. 1, 167 ; P. 1, 2, 58 ; 18, 955 : in iron and steel (abst.), 1, 104 ; 9, 8 : in iron and its ores (abst.), 6, 193 : determination of silicon, in iron and steel (abst.), 1, 104, 285, 371, 562 ; 4, 165 : determination of sulphur, in iron, 18, 1079 : in pig iron, 19, 114 : in iron and steel (abst.), 1, 560 ; 4, 165

Iron, determination of, in aluminum, 18, 768 : electrolytic, 18, 654 : in ores, Zimmermann-Reinhardt method for, 17, 405 : in organic mixtures (abst.), 1, 347 : by permanganate in presence of hydrochloric acid (abst.), 6, 312 : in phosphates, 17, 260 : in phosphate rock, by means of ammonium acetate, 18, 717 : in phosphate rock, new method for, 18, 271 : volumetric, by means of hydrogen dioxide, 18, 918 : volumetric, modification of permanganate method for, 19, 575 : volumetric, in ores, 17, 878 : volumetric, by means of stannous chloride, 15, 396 : volumetric, by various methods, errors in (abst.), 6, 242

Iron group, qualitative separation of metals of, 17, 537

Iron manufacture, German economy in, 15, 284

Iron ores, determination of phosphorus in (abst.), 6, 193 : determination of insoluble phosphorus in, 19, 614 : determination of titanium in (abst.), 4, 165 : error in analysis of, due to presence of

chromium (abst.), 4, 166: method for complete analysis of, 19, 144: occurrence of vanadium in, P. 1, 84: titaniferous, analysis of (abst.), - - - - - 4, 164

Iron pyrites, synthesis of (abst.), - - - - - 12, 155

Iron, separation of, from aluminum, 17, 931: (abst.), 7, 124: from arsenic, by hydrobromic acid gas, 20, 809: from arsenic, by hydrochloric acid gas, 18, 1040: from beryllium, 17, 688: from cobalt (abst.), 1, 529: from gallium (abst.), 4, 168: from lanthanum, 20, 846: from manganese (abst.), 1, 325, 529, 533; 8, 277; 9, 10: from nickel (abst.), 1, 529; 8, 277: from titanium, 16, 427; 20, 513: from uranium, 20, 514: from zinc (abst.), 1, 529; 8, 277; 9, 9: from zirconium and allied metals, - - - - - 20, 846

Iron and steel, committee on international standards for the analysis of, 15, 448; 16, 140, 286: thermochemical study of, 19, 754; 20, 78: standard methods for analysis of, - - - - - 15, 501

Iron and steel, present possibilities in the analysis of (presidential address), - - - - - 19, 93

Iron, zinc, and magnesium, as reducing agents with ferric salts (abst.), - - - - - 4, 223

Irvingia from Cochin China, and the fatty matter contained (abst.), - - - - - 8, 110

Isatin (abst.), 7, 57: characteristic reaction for (abst.), 1, 543: constitution of (abst.), - - - - - 7, 173

Isatoic acid (abst.), - - - - - 7, 174

Isatoic acid, *p*-methyl-, and its derivatives (abst.), - - - - - 7, 144

Isocyanide, presence of, in commercial benzene (abst.), - - - - - 7, 29

Isodulcite (abst.), - - - - - 9, 111

Isomeric compounds of the aromatic series, heat of neutralization of (abst.), - - - - - 8, 21

Isomerism of alcohols and acids, influence of, in the formation of esters (abst.), - - - - - 2, 182

Isonitroso. See Nitroso.

Isopurpurine, detection of (abst.), 2, 95: relation of, to anthrapurpine and flavopurpurine, - - - - - 1, 184

Itaconic acid, new acid isomeric with (abst.), - - - - - 5, 124

Jervine, chemistry of (abst.), 1, 553: *pseudo*-Jervine, chemistry of (abst.), - - - - - 1, 554

Journals, chemical, abbreviations of titles of, - - - - - 10, 152

Kaolins, American, composition of, - - - - - 18, 909

Kekulé anniversary, - - - - - 12, 80

Kent chemical laboratory, opening of, - - - - - 16, 213

Kerosene oil, P. 1, 71: cause of diminishing flame in lamps fed with inferior (abst.), 6, 29: determination of flashing point of (abst.), 5, 53, 245

Ketone, tolylmethyl- (abst.), - - - - - 4, 206

Ketones, action of heat on (abst.), 8, 200: action of nitric acid on (abst.), 4, 208: compounds of hydrazines with (abst.), 5, 239: Friedel-Craft's synthesis of, from phenol ethers (abst.), 12, 227

heat of combustion of some (abst.), 6, 90: nitrogenized acids derived from (abst.), - - - - - 4, 208

Kidney bean, proteids of, - - - - - 16, 633, 703, 757

Kieselguhr, technical applications of (abst.), - - - - - 6, 140

Kjeldahl method for determination of nitrogen (abst.), 7, 179; 8, 81; 10, 45: behavior of nitrates in (abst.), 7, 290: digestion furnace for (abst.), 7, 291: for compounds of the aromatic series, 7, 108: error in, 13, 212: modification of (abst.), 7, 291; 8, 81; 11, 54: note on Warington's modification of (abst.), - - - - - 7, 291

Knorr's extraction apparatus, modification of, - - - - - 16, 868

Kobellite, new variety of, - - - - - 7, 194

Koettstorfer figure, method of determining, for dark-colored substances, - - - - - 16, 408

Kola, caffeine compound in, 19, 63; 20, 34: methods of assay, discussion of, 20, 74: nuts, analysis of (abst.), - - - - - 4, 234

Kolatannin, 20, 43: derivatives of, - - - - - 20, 48

Krakatoa, analysis of ash from eruption of (abst.), - - - - - 6, 127

Laboratory devices, - - - - - 16, 869

Lactates (abst.), 8, 275: influence of, on the digestion of albuminoids, 12, 394

Lactic acid, detection and determination of (abst.), 9, 16: preparation of (abst.), - - - - - 5, 20

Lactic acid, chlor-, formation of, from glyceric acid (abst.), - - - - - 1, 289

Lactometer tests, - - - - - 13, 93

Lactometer, utility and reliability of, - - - - - 10, 122

Lactone of hydroxypropylmalonic acid (abst.), 4, 270: from levulinic acid and formaldehyde, 15, 708: from pyrotartaric acid and formaldehyde, - - - - - 15, 707

Lactone, α -ethylvalero-, etc. (abst.), - - - - - 5, 100

Lactones, on the boiling-points of (abst.), 4, 271: formation of (abst.), 4, 271

Lactose. See Milk sugar.

Lactucone (abst.), - - - - - 1, 158

Lamp, convenient, for generating formaldehyde gas and acetic aldehyde, 19, (11): gasoline, improvement on, 17, 337: Lilienfein's, for low boiling petroleum (abst.), 6, 106: for monochromatic flame, - - - - - 15, 121

Lamp and candle for blowpipe, - - - - - 1, 2, 78

Lamps, cause of diminishing flame of (abst.), - - - - - 6, 29

Lanolin (abst.), - - - - - 8, 109

Lanthanum, separation of, from iron, - - - - - 20, 846

Lanthanum molybdate, composition of, 17, 536: tungstate, composition and solubility of, - - - - - 17, 533

Lard, analysis of, phosphomolybdc acid applied to, 17, 33: calorimetric detection of adulterations in, 18, 174: detection of cotton-seed oil in (abst.), 10, 115: detection of foreign fats in, 19, 796: detection of rosin oil or paraffin oil in (abst.), 4, 192: examination of, for impurities, 17, 723: microscopic detection of beef fat in, 18, 189: test for cotton-seed oil and beef stearin in (abst.), - - - 10, 182

Lards, compound, determination of solid fats in, - - - - - 19, 51

Larderello, boric acid works, at, - - - - - 16, 538

Lauth's violet and methylene blue, spectroscopic examination of, - - - - - 6, 304

Lavoisier memorial, - - - - - 19, 170

Law, Faraday's (abst.), 6, 156: Faraday's and Bouthy's (abst.), 6, 126: the perissad, 12, 426: of volumes, additions to the (abst.), - - - - - 1, 168

Lead, action of ammonium hydroxide on the haloid salts of, 6, 218: action of petroleum on (abst.), 10, 92: and its alloys, action of cold sulphuric acid on, 5, 219: and its alloys, action of sulphuric acid at 100° on, 5, 224: alloys of, with tin, blowpipe reactions of, P. 2, 108: alloys of, with tin, commercial valuation of, 16, 541: alloys of, with tin, specific heat of (abst.), 8, 197: alloys of, with antimony, arsenic and tin, 17, 869: alloys of, with antimony, commercial valuation of, 16, 541: analysis of aragonite containing, P. 2, 14: assay of, in the wet way (abst.), 7, 62: bismuth in, in the manufacture of white lead, P. 1, 70: cause of discrepancies in the estimation of silver in, P. 1, 67: detection of minute traces of, by colorimetric method (abst.), 1, 87: electrolysis of pyrophosphate of (abst.), 12, 172: metallic, detection of silver in (abst.), 4, 168: spongy, reducing action of (abst.), - - - - - 5, 233

Lead acetate, peculiar reaction with, 4, 213: chromate, preparation of crystallized (abst.), 9, 110: chromate, preparation of crystallized chromic acid from (abst.), 9, 222: compounds, aromatic (abst.), 10, 39: dioxide, action of, on haloid salts in the presence of acetic acid (abst.), 5, 23: dioxide, action of hydrogen dioxide on (abst.), 2, 51: dioxide, preparation of, (abst.), 5, 51: halides and halo-thiocyanates, on, 19, 820: iodide, on (abst.), 5, 120: oxide, action of potassium hydroxide on (abst.), 4, 237: salts, decomposition of, by alkalies (abst.), 4, 237: sulphate, crystallized, see Anglesite: sulphiodide, 17, 511: tetrachloride, derivatives of, - - - - - 20, 815

Lead, determination of, in alloys, 20, 508: as iodate (abst.), 1, 535: in lead ores, 19, 374: technical, 15, 548: volumetric, - - - - - 4, 35; 17, 901; 18, 737; 19, 389

Lead pipe, action of waters on, P. 1, 66; 13, 176: (abst.), - - - - - 2, 432; 9, 221; 10, 71

Lead poisoning by carbonated beverages, note on, - - - - - 11, 99

Lead, separation of, from antimony, by hydrobromic acid gas, 20, 801: from bismuth, 18, 1055: from bismuth, by hydrobromic acid gas, 20, 802: from bismuth, by hydrochloric acid gas, 18, 1034: from mercury, electrolytic, 15, 101: from silver, electrolytic, - - - - - 15, 102

Leaden chamber process, mixing of gases in (abst.), - - - - - 4, 73

Leather refuse, the value of (as fertilizer), - - - - - 18, 565

Lecithins of sugar-cane, - - - - - 20, 113

Lecture experiment, action of water on bismuth iodide (abst.), 4, 142: the condensation of gases (abst.), - - - - - 2, 95

Lecture experiments, 12, 48: (abst.), - - - - - 4, 205, 227

Legumelin, a proteid of most leguminous seeds, 20, 354, 415: properties of, 20, 415

Legumin, properties of, 20, 410: and other proteids of the pea and the vetch, 18, 583

Leguminous plants, occurrence of citric acid in the seeds of (abst.), 7, 30

Lehigh Valley Section, meetings of, 17, (26), (44), (63); 18, (32); 19, (31); 20, (101)

Lemon juice, citric acid in (abst.), 10, 195

Lemon oil (abst.), 7, 247

Lentil, proteids of the, 20, 362, 410

Le Sueur process for the electrolytic production of sodium hydroxide and chlorine, 20, 868

Leucocytopenia, abnormal constituents of the blood due to, P. 1, 2, 29

Leucomaines and ptomaines (abst.), 9, 114

Leucosin (from barley), 17, 541: (from malt), 18, 547: (from rye kernel), 17, 432: properties of, 16, 528

Levulose, estimation of, in honey, 18, 81, 189: pure, preparation of (abst.), 2, 133: synthesis of (abst.), 12, 165

Library, additions to, 1, 39, 129, 311; 2, 2; 6, 4, 112, 147, 181, 280

Library, catalogue of books of, P. 2, 155

Licari kanali, essential oil of (abst.), 4, 233

Light, action of, on soluble iodides, 2, 249: influence of, on chemical processes (abst.), 1, 93: influence of, on decomposition of iodides, 1, 65

Lignification, on the chemistry of (abst.), 5, 91

Lignone chloride from wheat fiber, 19, 296

Lime, determination of, by photometric method, 18, 665

Lime juice, determination of nitric acid in (abst.), 1, 367

Lime mud, conversion of, into cement (abst.), 10, 91

Lime, pyrolyginate of. See Calcium acetate, crude.

Lime, quick-, determination of calcium oxide in, 16, 721: technical valuation of (abst.), 1, 559

Linoleic acid (abst.), 8, 185, 230

Linseed oil, adulteration of (abst.), 8, 28

Liquefaction of gases, electrolytic method of (abst.), 10, 78

Liquids, determination of specific gravity of (abst.), 2, 171: some thoughts about, 18, 724

Liquor, Chinese, analysis of, 7, 243

Liquors, alcoholic, examination of (abst.), 12, 503: spirituous, limits of fused oil in (abst.), 9, 17

Liskeardite (abst.), 5, 97

Lithium, determination of, in mineral waters, 12, 214: errors in determining, as phosphate (abst.), 1, 106, 335: separation of, as fluoride (abst.), 10, 193

Lithium bromoselenate, 20, 570: chloride, compounds of, with alcohols (abst.), 2, 135: picrate (abst.), 1, 286: salts, volatility of, 19, 156: sulphate, heat of solution of (abst.), 7, 52: trinitride, 20, 226

Lithographic stones, American, 14, 376

Litmus, note on, - - - - - P. 1, 79
 Lophine, constitution of (abst.), - - - - - 4, 225; 5, 91
 Lubricant for glass stop-cocks, 20, 678: preparation of (abst.), 8, 109:
 for wire drawing (abst.), - - - - - 8, 275
 Lubricating oils, analysis of, - - - - - 15, 265
 Lupanine from the seeds of *Lupus angustifolius* (abst.), - - - - - 7, 247
 Lupin seeds, proteids of, - - - - - 18, 622; 19, 454
 Lupinin, action of sodium on (abst.), 5, 17: anhydro- (abst.), - - - - - 5, 17
Lupus angustifolius, lupanine from the seeds of (abst.), - - - - - 7, 247
 Lutidine of coal tar (abst.), 6, 36, 82: a new (abst.), 12, 233: and
 quinoline (abst.), - - - - - 4, 272
 Lyes, estimation of glycerol in (abst.), - - - - - 10, 182
 Lysimeter, apparatus for determining solubilities, - - - - - 16, 715
 Magnesia, action of, in expelling ammonia from salts and amines
 (abst.), 6, 27: displacement of ammonia by (abst.), 9, 99: use of,
 in the manufacture of chlorine (abst.), - - - - - 10, 85
 Magnesia soaps, preparation of soluble (abst.), - - - - - 8, 64
 Magnesium, action of, upon manganous salts, 16, 822: atomic weight
 of, 19, 363: delicacy of test with sodium phosphate for (abst.), 1,
 96: precipitation of, as oxalate (abst.), 1, 528: reducing action of,
 16, 833: reduction of oxygen compounds by (abst.), 12, 152: sep-
 aration of, from alkalies as oxalate (abst.), 1, 529: volumetric de-
 termination of (abst.), 1, 564: zinc, and iron, as reducing agents
 with ferric salts (abst.), - - - - - 4, 223
 Magnesium amalgam, reductions with, 17, 789: basic acetate (abst.),
 5, 19: carbonate, solubility of, in carbonic acid water (abst.), 7,
 114: chloride, compounds of, with alcohols (abst.), 2, 135: chlo-
 ride, manufacture of chlorine from (abst.), 9, 224: chloride, vola-
 tility of, 19, 156: hydrosulphide as a source of hydrogen sulphide
 (abst.), 6, 311: nitride, production of, by smothered combustion
 of magnesium in air, P. 1, 2, 17: oxychlorides (abst.), 4, 230: py-
 rophosphate, estimation of phosphoric acid as, 4, 135: (abst.), 5,
 243: sulphate, heat of solution of (abst.), - - - - - 7, 52
 Magnesium group, volume constitution of sulphates, selenates, and
 chromates (abst.), - - - - - 1, 492
 Magnetites, American, occurrence of vanadium in, - - - - - P. 1, 58
 Maize, albuminoids of, 14, 313: investigations upon, 12, 369: the oil
 of, - - - - - 20, 948
 Malates, optical rotation of (abst.), - - - - - 4, 263
 Maleic acid from α -dibromopropionic acid (abst.), - - - - - 2, 172
 Maleic and fumaric acids, contributions to the knowledge of (abst.), 1, 236
 Malic acid from α -dibromopropionic acid (abst.), 2, 172: formation of
 pyridine derivatives from (abst.), 7, 117: inactive, splitting up of
 (abst.), 2, 369: optical rotation of (abst.), - - - - - 4, 263
 iso-Malic acid (abst.), - - - - - 1, 295
 Malonate, ethyl, action of ethylene bromide on (abst.), - - - - - 6, 83
 Malonic acid, condensation products of, with benzaldehyde (abst.), -

5, 237: electrolysis of (abst.), 2, 431: note on (abst.), 1, 494: preparation of (abst.), - - - - - 1, 385; 2, 435

Malonic acid, allyl-, behavior of, with sodium hydroxide, 17, 1: allyl-, action of bromine on (abst.), 4, 271: chlor-, and its derivatives (abst.), 4, 270: heptyl-, and heptylacetic acid, 5, 10: hydroxypropyl-, and its lactones (abst.), 4, 270: nitroso-, constitution of (abst.), - - - - - 5, 131

Malt, analysis of, 16, 353, 559: and barley, nitrogenous constituents of (abst.), 6, 173: oil of, note on, 7, 22: the proteids of, - - - - - 18, 542

Manganate, potassium, and some of its analytical uses (abst.), - - - - - 9, 119

Manganese, action of hydrogen dioxide on (abst.), 10, 193: the actual accuracy of determinations of, 18, 808: in the ash of wheat, P. 2, 141: basic salts of (abst.), 4, 242: electrolysis of pyrophosphate of (abst.), 12, 170: electrolytic separation of, from other metals (abst.), 12, 173: existence of, in wines (abst.), 6, 200: precipitation of, by means of bromine vapor (abst.), - - - - - 5, 244

Manganese amalgam (abst.), 1, 276: dioxide, action of, on haloid salts in presence of acetic acid (abst.), 5, 23: dioxide, action of hydrogen dioxide on (abst.), 2, 51: dioxide, notes on (abst.), 2, 344: dioxide of the Weldon process, composition of (abst.) 2, 96: ferrocyanide, 18, 1100; 19, 542, 547: higher oxides of, and their hydrates (abst.), 4, 168: an oxide of, soluble in water (abst.), 9, 99: palladium bromide, 16, 468: precipitated dioxide of, note on, 15, 114: salts, action of ozone on (abst.), 4, 234: silicated chloride of (abst.), - - - - - 6, 76

Manganese and chromium compounds corresponding to potassium ferri- and ferro-cyanides (abst.), - - - - - 7, 140

Manganese, determination of, in aluminum alloys, 18, 774: in alloys of iron (abst.), 1, 83: in cast and spiegel iron (abst.), 6, 242: in iron ores, 18, 385: in iron and ores, by use of hydrofluoric acid, 20, 504: in iron and steel, 19, 104: in manganese bronze, 15, 414: methods for, 17, 341: notes on Särnström's method of, 19, 139: as pyrophosphate, P. 1, 215: in steel, apparatus for colorimetric, 19, 286: in steel, sources of error in, 18, 498: volumetric, 17, 943; 18, 228: (abst.), 1, 329; 7, 91: volumetric, by precipitation as dioxide (abst.), - - - - - 1, 327

Manganese, separation of, from aluminum and iron (abst.), 1, 325: from aluminum and iron, as oxalate (abst.), 1, 529: from iron (abst.), 1, 533; 9, 10: from iron and nickel, 8, 277: from nickel and zinc, 8, 277: from tungsten, 10, 1053: from zinc, - - - - - 1, 327; 8, 277

Manganous hydroxide, oxidation of (abst.), 2, 96: salts, action of magnesium upon, - - - - - 16, 822

Mannan, - - - - - 18, 219

Mannide (abst.), - - - - - 5, 120

Mannitol, heat of solution of, in water, 18, 156: second anhydride of (abst.), - - - - - 6, 38

Mannose and levulose, synthesis of (abst.), - - - - - 12, 165

Manure, value of ferrous sulphate as (abst.), - - - - - 6, 77
 Manures, natural and artificial (abst.), - - - - - 10, 47
 Maple sugar and syrup, composition of (abst.), - - - - - 7, 92
 Marienbad spring water, analysis of (abst.), - - - - - 2, 135
 Marine oils, analysis of, - - - - - 11, 155
 Marsh's test for arsenic (abst.), 12, 353, 477: quantitative determination of antimony according to (abst.), - - - - - 12, 476
 Maumené's test for oils (abst.), - - - - - 8, 108
 Maximum work, principle of (abst.), - - - - - 7, 138
 Maysin, a proteid of maize kernel, composition and properties, - - - - - 19, 527
 Measuring apparatus for reagents, - - - - - 19, 282
 Medals, alchemical, exhibition of, - - - - - 13, 30
 Meetings, general, of American Chemical Society, 15, 177; 16, 73, 575, (3); 17, (5), (51); 18, (7), (101); 19, (1), (51); 20, (7), (87)
 Meetings of the Sections. See names of various sections.
 Mellitose in cotton-seed (abst.), 7, 30: notes on (abst.), - - - - - 12, 71
 Melting-point of alloys, apparatus for determination of (abst.), 4, 263: apparatus for determination of (abst.), 4, 169; 8, 278; 12, 226: of butter, determination of, 15, 661: of cyanogen iodide (abst.), 12, 225: of fats (abst.), 8, 86: of fats and fatty acids (abst.), 8, 65: method for determination of (abst.), - - - - - 1, 375
 Menthène, transformation of terpiline into a (abst.), - - - - - 10, 191
 Menthol, American, observations on, 14, 149: action of carbon disulphide on (abst.), 12, 161: and some derivatives (abst.), 4, 144: oxidation of, by potassium permanganate (abst.), - - - - - 6, 164
 Mercurialine, identified with methylamine (abst.), - - - - - 1, 100
 Mercuric chloride, action of heat on (abst.), 4, 225: chloride, reactions of (abst.), 4, 238: chlorothiocyanate, 18, 906: cyanide, decomposition of, by dilute acids, 1, 556: iodide, solubility of, in fatty compounds (abst.), 8, 40: oxide, action of allylene on (abst.), 6, 167: oxide and salts, action of acetylene hydrocarbons on (abst.), - - - - - 6, 93
 Mercurous iodide and bromide, crystallized (abst.), - - - - - 9, 209
 Mercury, action of sulphuric acid upon, 19, 873; 20, 100: atomic weight of, 19, 365: atomic weight of, electrolytic determination of, 18, 1003: decomposition of sulphuric acid by, 20, 515: determination of (abst.), 12, 17: determination of, by titration with ammonium thiocyanate (abst.), 1, 323: determination of, in cinabar, electrolytic, 18, 96: double salts formed by haloid salts of (abst.), 4, 208: double salts of (abst.), 4, 231, 232: electrolysis of pyrophosphate of (abst.), 12, 171: electrolytic estimation of, 18, 169: (abst.), 1, 99: haloid salts of, decomposition of (abst.), 4, 233, 234: improved apparatus for distillation of (abst.), 1, 376: ores of, blow-pipe assay of (abst.), 1, 370: purification of (abst.), 1, 292, 377, 378: separation of, from antimony, arsenic and tin, 15, 205: separation of, from bismuth, 15, 28: separation of, from bismuth, copper, and lead (abst.), 9, 12: separation of, from bismuth and lead, 15, 101: separation of, from copper, 16, 423: separation

of, from palladium (abst.), 9, 12: sublimation of (abst.), 8, 20:
vapor of, reagent for (abst.), - - - - - 1, 336

Mercury, ammoniacal compounds of, contributions to the knowledge of (abst.), 1, 259: fulminate, chemistry of (abst.), 7, 122: fulminate, derivatives of (abst.), 7, 80: haloid salts, emission spectra of (abst.), 1, 374: haloid salts, thermochemistry of double decompositions of (abst.), 4, 233, 234: oxychlorides and oxybromides, thermochemical study of (abst.), - - - - - 6, 127

Mesitylenephthaloylic acid (abst.), - - - - - 5, 18

Mesitylenesulphuric acid, products of fusion of, with potassium hydroxide (abst.), - - - - - 1, 252

Metal work, ancient, composition of (abst.), - - - - - 4, 171

Metals, electrolytic separation of, notes on, 13, 140: molecular structure of (abst.), 5, 21: precious, divining the presence of, 19, (23): separation of, by hydrobromic acid gas, 20, 797: separation of, by hydrochloric acid gas, 18, 1029: spectroscopic examination of the vapors obtained by heating some (abst.), 6, 232: use of pyrophosphate double salts for determining, by electrolysis (abst.), 12, 168: vaporization of, *in vacuo* (abst.), - - - - - 4, 242

Metallic compounds containing bivalent hydrocarbon radicals (abst.), 4, 258: fragments from Peruvian sepulchres, analyses of (abst.), 1, 276: hydroxides, compounds of, with iodine, 19, 333: hydroxides, dehydration of, by heat (abst.), 9, 189: phosphides (abst.), 1, 168: reducing agents, contribution to knowledge of, 16, 833: salts, compiled data on the action of heat on, 5, 135: sulphides, action of ammonium salts on (abst.), - - - - - 1, 331

Metalloids, behavior of chlorosulphonic acid with (abst.), - - - - - 4, 261

Metallurgy, history of electric heating applied to, - - - - - 18, 287

Metatitanic acid, - - - - - 13, 210

Meteorite, Carcote, analysis of (abst.), 12, 155: Zsadányer, results of analysis of (abst.), - - - - - 1, 86

Methane, aromatic derivatives of (abst.), 4, 202: determination of, by explosion, in technical analysis, 20, 343: and hydrogen in the atmosphere, 17, 801: and hydrogen, determination of, by explosion, 17, 986: illuminating power of (abst.), - - - - - 7, 213

Methyl carbonate, heat of combustion of (abst.), 6, 90: chloride, density and coefficient of expansion of (abst.), 1, 271: chloride and toluene in presence of aluminum chloride, hydrocarbons formed from (abst.), 1, 280, 398: cyanide (abst.), 2, 433: cyanide, properties of mixtures of, with methyl and ethyl alcohols (abst.), 2, 430: formate, preparation of (abst.), 1, 389: iodoform (abst.), 10, 114: sulphate and methylsulphuric acid (abst.), 1, 492: violet test paper, - - - - - 4, 31

Methyl alcohol, acetone in (abst.), 10, 195: determination of, in wood spirit (abst.), 1, 579: from the dry distillation of colophony (abst.), 5, 123: preparation of pure (abst.), - - - - - 1, 389

Methylamine, identical with mercurialine (abst.), 1, 100: bromosele-

nate, 20, 572: carbonate, influence of temperature and pressure in the action of potassium chloride on (abst.), - - - - - 9, 103

Methylamines, action of alkyl chlorides on (abst.), - - - - - 8, 95

Methylaniline, action of nitrous anhydride upon, 13, 111: coloring matters derived from (abst.), - - - - - 1, 273

Methylanthranol, amido- (abst.), - - - - - 5, 241

Methylated diethyleneamines (abst.), - - - - - 2, 223

Methylbenzoyl, direct chlorination of (abst.), - - - - - 8, 167

Methyl-*pseudo*-chlorisatin from *m*-chlorquinolinemethyl chloride (abst.), - - - - - 7, 229

Methylcrotonic and angelic acids, contributions to the history of (abst.), - - - - - 1, 396

Methyldiacetoneamine (abst.), - - - - - 2, 175

Methylene, commercial, determination of methyl alcohol in (abst.), 1, 486

Methylene blue (abst.), 6, 86: and Lauth's violet, spectroscopic examination of, - - - - - 6, 304

Methylene chloride, action of, on toluene and benzene (abst.), 6, 163: chloride, preparation of, 1, 522: chloriodide, note on (abst.), - - 7, 214

Methylene, diethoxy-, - - - - - 1, 522

Methylformyl-*o*-amidochlorbenzoic acid from *m*-chlorquinolinemethyl chloride (abst.), - - - - - 7, 229

α-Methylhydroxysuccinic acid (abst.), - - - - - 2, 342

p-Methylisatoic acid and its derivatives (abst.), - - - - - 7, 144

Methylketole, an isomer of skatole (abst.), - - - - - 2, 174

Methylmorphine hydroxide (abst.), 2, 98: iodide, action of potassium ferrocyanide on (abst.), - - - - - 2, 98

Methylpropylcarbinol, active, and fungi which destroy it (abst.), 2, 132

Methylsulphuric acid and methyl sulphate (abst.), - - - - - 1, 492

Methyltoluidine, coloring matters derived from (abst.), - - - - - 1, 273

Methyl- and dimethylacetoneamine (abst.), - - - - - 2, 175

Methyl- and ethylacetylcyanate of ethyl (abst.), - - - - - 6, 164

Mica scale-pans, - - - - - P. 1, 126

Micas, lithia, constitution of - - - - - 15, 245

Microbes, influence of sunlight on (abst.), - - - - - 7, 77

Micro-organisms, chemical action of (abst.), - - - - - 10, 84

Microscopic preparations, staining of (abst.), - - - - - 1, 584

Milk, acidity of, increased by boric acid, 18, 847: adulteration of, detection of (abst.), - - - - - 1, 570

Milk analysis, 15, 579: (abst.), 4, 188; 8, 43: acetic acid used in (abst.), 8, 205: Adams' method for (abst.), 9, 13: asbestos cloth substituted for blotting-paper in (abst.), 9, 175: in Canada, official, 14, 363: contributions to the literature of, P. 1, 227: experiments in, - - 13, 52

Milk, analyses of, 13, 120: (abst.), 9, 122: artificial digestion of, 14, 89: average composition of (abst.), 8, 28; 10, 47: composition of, 15, 645: (abst.), 10, 190: condensed, 13, 160: condensed, estimation of sugar in, 15, 668: cow's, addition of goat's milk to (abst.), 8, 233: from cows fed on swill, composition of, - - - - - 12, 451

Milk, determination in, of albumin, 16, 712: of casein, 15, 635: of fat, 10, 32: (abst.), 1, 358: 8, 61, 61; of fat, optical estimation (abst.), 1, 570: of fat, relative merits of the Wanklyn and the Adams method for 12, 488: of milk sugar, 18, 428, 1111: (abst.), 8, 205: of protein compounds (abst.), 9, 48: of solids (abst.), 1, 357: of water (abst.), 1, 358; 4, 188; 8, 232

Milk of elephant, composition of, 3, 55; 4, 157: goat's, addition of, to cow's milk (abst.), 8, 233: human, composition and methods of analysis of, 6, 252: human, contribution to the study of (abst.), 9, 113: influence of sterilization upon, 13, 34: nitrates and nitrites as evidence of adulteration of (abst.), 9, 13: in the Paris hospitals (abst.), 8, 62: porpoise, composition of (abst.), 7, 290: porpoise, fat of (abst.), 8, 184: preserved, alterations of (abst.), 5, 28: proteids of, 13, 72: skim-milk, and whey, comparative study of, 15, 347

Milk and butter, determination of solids and fat in (abst.), 10, 27

Milk and urine of herbivorae, estimation of nitrogen in (abst.), 8, 279

Milk ripener and purifier (abst.), 8, 43

Milk sugar, determination of, in milks, 18, 428, 1111: determination of in milk (abst.), 8, 205: determination of mixtures of, with cane-sugar (abst.), 7, 149: examination of (abst.), 7, 85: existence of the proximate constituents of, in plants (abst.), 8, 62: partial synthesis of (abst.), 2, 89

Mineral group from York, Pa. (note), 15, 543

Mineral water from Irondale, W. Va., analysis of, 6, 123

Mineral waters, determination of lithium in, 12, 214: from northwestern Pennsylvania, analyses of, 18, 915: from Texas, analysis of, 11, 141

Minerals, action of sulphur monochloride on, 20, 289: behavior of, in hydrobromic acid gas, 20, 809: carbon, analyses of, 13, 143: humite, examination of (abst.), 7, 226: and rocks, microchemical analysis of (abst.), 1, 95: Spanish, analyses of (abst.), 2, 43

Mint, United States, smelting furnace of, 7, 159

Models for illustrating relationship between gas volumes and molecular weights, 15, 542

Mohr's burette, modification of, 3, 124

Moisture remaining in gases dried by means of phosphorus pentoxide (abst.), 10, 67: retained by gases dried by means of sulphuric acid (abst.), 7, 295: in a soil, physical effects of salts and fertilizers upon, 19, 620

Moisture and oil, determination of, in linseed cakes, etc., 16, 114

Molasses, spontaneous combustion of, 19, 538

Mold, influence of vegetable, on the nitrogenous content of oats, 19, 605

Molding sand, analysis of a, 17, 502

Molecular refraction of terpenes (abst.), 4, 173: rotation, synthesis of bodies possessing (abst.), 6, 74: structure of the metals (abst.), 5, 21: volume of salt solutions (abst.), 6, 48: volumes of some double chlorides (abst.), 6, 232: weight of liquids determined by

means of surface tension, 18, 514: weights of some carbon compounds, - - - - - 20, 546

Molecule, determination of number of atoms in (abst.), - - - - - 6, 47

Molybdate, ammonium, a modified solution of, - - - - - 18, 445

Molybdates, complex (abst.), 1, 111: of rare earths, - - - - - 17, 483, 520

Molybdenum, action of carbonyl and sulphur chlorides upon, 15, 206: atomic weight of, 15, 397; 16, 184; 18, 207: chemical behavior of, 17, 381: compounds, reduction of (abst.), 5, 51: separation of, from tungsten, - - - - - 19, 242

Molybdenum carbide, 17, 421: dioxide, action of, on silver salts, 16, 569: hexachloride, attempt to prepare, 16, 577: trioxide, action of phosphorus pentachloride upon, 16, 425: trioxide, chemical behavior of, - - - - - 17, 381

Molybdenyl chloride, action of ammonia gas upon, - - - - - 15, 61

Molybdic acid, action of haloid acids upon, 15, 18: determination of phosphorus by means of, P, 1, 167: on a hydrate of (abst.), 5, 118: reaction of, with potassium chromate and dichromate, - - - - - 16, 565

Monazite sand, analysis of, - - - - - 18, 782

Mond and Tyrer, banquet to, - - - - - 17, 997

Monochromatic flame, lamp for, - - - - - 15, 121

Morphine, action of benzoyl chloride on (abst.), 2, 98: action of potassium ferricyanide on (abst.), 2, 97: action of potassium permanganate on (abst.), 2, 98: in ammoniacal solution, action of air on (abst.), 2, 98: complex function of (abst.), 4, 76: determination of, in opium, 7, 45; 10, 143: (abst.), 7, 33; 10, 45: fallacies of post-mortem tests for, 16, 799: separation of, from fatty matters (abst.), 9, 15: solubility of (abst.), 4, 76: transformation of, into picric acid (abst.), - - - - - 4, 76

Mortar, on the hardening of, - - - - - 16, 733

Mortars, ancient (abst.), - - - - - 10, 158

Motor, hot air, for laboratories, - - - - - 17, 494, 520

Mucate, antimonyl potassium (abst.), - - - - - 6, 35

Mucic acid and saccharic acid, derivatives of (abst.), - - - - - 10, 17

Muffle for incineration of sugar, - - - - - 16, 151

Museum, contributions to, - - - - - 2, 6

Mustard, method for analysis of, - - - - - 3, 130

Mustard oil, examination of (abst.), 8, 87: ethyl, new formation of (abst.), - - - - - 2, 221

Mustard oil glycolide (abst.), - - - - - 4, 267

Mustard oils, action of, on the amido acids (abst.), 7, 85: aromatic bases isomeric with (abst.), 2, 93: preparation of (abst.), - - - - - 5, 26

Musts, examination of, for sugar and acid (abst.), 7, 63: of 1883, examination of, for acids and sugar (abst.), - - - - - 6, 243

Muter's method for analysis of fats and oils, - - - - - 15, 110

Myristic acid, oxidation of, with nitric acid (abst.), - - - - - 8, 205

Naphtha, determination of, in petroleum, P. 1, 119: distillation of, in current of steam (abst.), - - - - - 7, 33

Naphthalene, action of iodine on, at high temperatures (abst.),	4, 232
action of phthalic anhydride on, in presence of aluminum chloride (abst.),	1, 485
alpha- and beta-position in (abst.),	2, 94, 132
constitution of some bromine derivatives of (abst.),	5, 91
and benzene, compounds of, with antimony trichloride (abst.),	5, 60
and benzhydrol, condensation of (abst.),	2, 369
derivatives of (abst.),	6, 87, 164
derivatives of, new syntheses of (abst.),	7, 115
Naphthalene series, law of substitution in (abst.),	4, 206
Naphthalene tetrachloride, action of water and silver hydroxide on	2, 205
Naphthalene, azo- (abst.),	7, 228
dinitro- (abst.),	2, 369
β -Naphthalene, diazo-, action of, on phenols	6, 151
Naphthalenes, amido-, transformation of α - and β -naphthol into (abst.),	4, 270
α -Naphthoic acid, nitro- (abst.),	7, 147
α -Naphthol and β -naphthol, transformation of, into amidonaphthalenes (abst.),	4, 270
β -Naphthol, action of chloroform on (abst.),	4, 241
dihydric alcohol derived from (abst.),	4, 77
Naphthol, chloro-, bromo-, and iodo-, action of aluminum chloride upon (abst.),	8, 94
chloro-, from β -naphtholsulphonic acid (abst.),	4, 229
dinitro- α -, amine derivatives of,	19, 927
chlorination of,	19, 927
dinitro- α -, salts of, with various metallic bases,	19, 923
diphenyldiamido- (abst.),	2, 170
β -Naphtholaldehyde (abst.),	5, 23
β -Naphtholsulphonic acid, dichloronaphthalene and chlornaphthol from (abst.),	4, 229
Naphthoquinone (abst.),	2, 91
compounds of, with toluidine and ethyl-aniline (abst.),	5, 19
Naphthoquinone, dichlor-, action of amines on (abst.),	4, 265
Naphthylamine, compound of <i>cenanthaldehyde</i> with,	5, 2
diethyl-,	
action of sulphuric acid on (abst.),	4, 201
preparation of (abst.),	4, 200
dimethyl-, oxidation of (abst.),	2, 91
β -Naphthylamine, action of diazo compounds on (abst.),	8, 22
Naphthylaminesulphonic acids, conversion of, into dichloronaphthalene (abst.),	10, 42
α -Naphthylsulphonic acid, action of phosphorus pentachloride on (abst.),	4, 228
Naphthylsulphuric acid (abst.),	4, 227
Narceine, iodides of,	16, 362
reaction of (abst.),	9, 177
Nebraska Section, meetings of,	18, (33), (68), (94); 19, (13), (25), (41), (66)
Neodidymium, separation of, from iron,	20, 846
Neodidymium molybdate, composition and solubility of,	17, 532
tung-state, composition and solubility of,	17, 530
Nephrites from lake dwellings, analyses of (abst.),	4, 206
Nessler comparer,	16, 872
Nesslerizing, tubes of colored glass for,	6, 121
Neutrality, indicator for (abst.),	5, 245

New York Section, meetings of, 17, (2), (38), (68); 18, (2), (28), (37), (61), (69), (72), (95), (120), (125); 19, (17), (25), (37), (43), (61), (64); 20, (5), (17), (32), (63), (82), (101), (108). - 12, 449

Niagara river water, aeration and composition of, - - - - - 12, 449

Nickel, atomic weight of, 16, 182; 17, 207; 20, 165: decomposition of (abst.), 10, 180: determination of, in aluminum alloys, 18, 773: determination of, electrolytic, 18, 658: determination of, by precipitation as oxalate (abst.), 1, 327: determination of, in nickel-steel, 16, 96; 16, 110; 17, 125: electrolysis of pyrophosphate of (abst.), - - - - - 12, 169

Nickel, separation of, from aluminum and iron, as oxalate, 1, 529: separation of, from arsenic, by hydrochloric acid gas, 18, 1042: separation of, from bismuth, electrolytic, 15, 104: separation of, from cobalt (abst.), 4, 166; 7, 250: separation of, from iron and manganese (abst.), 8, 277: separation of, from manganese and zinc (abst.), 8, 277: separation of, from zinc (abst.), - - - - - 1, 332; 6, 288; 8, 277; 9, 9

Nickel amalgam (abst.), 1, 276: arsenates, formation and constitution of two (abst.), 8, 49: chloride, action of hydrogen sulphide on (abst.), 4, 240: chloride, compounds of, with aniline, etc. (abst.), 1, 165: sulphate, action of insoluble sulphides on (abst.), - - - - - 4, 239

Nickel minerals, new, - - - - - 14, 205

Nickeliferous pyrrhotite, constitution of, - - - - - 14, 369

Nickelo-nickelic hydrate, 18, 901: oxide, formation of (abst.), - - - - - 1, 295

Nickel-steel, determination of nickel in, - - - - - 16, 96; 17, 125

Nicotine, determination of, in tobacco, 2, 338: (abst.), 4, 195: and nicotinic acid (abst.), - - - - - 2, 55

Nicotinic acid (abst.), 2, 55: from pyridine (abst.), - - - - - 4, 176

Nile, the river, analyses of water of, - - - - - 15, 34, 84

Niobite of the Iser mountains (abst.), - - - - - 2, 171

Niobium oxide, reaction of carbon tetrachloride with, - - - - - 18, 532

Niobium. See also Columbium.

Nitramidobenzenes, isomeric, action of sulphuric acid on (abst.), - - - - - 2, 95

p-Nitraniline, action of carbon bisulphide on (abst.), - - - - - 4, 264

Nitranilines, chlor- (abst.), - - - - - 2, 57

Nitrates, action of, on alkaline sulphides (abst.), 6, 142: action of heat on, 5, 162: action of hydrochloric acid gas upon, 17, 683: behavior of, in Kjeldahl process (abst.), 7, 290: detection of, in potassium chlorate (abst.), 9, 174: determination of, P. 2, 150: determination of, in potable water, P. 2, 5; 16, 122, 193: fermentation of (abst.), 5, 117: modification of Gunning's method for determining, 18, 1102: reduction of, in soils (abst.), 5, 117, 118, 119: in water, phenolsulphonic acid process for, - - - - - 16, 72

Nitrates and nitrites, determination of, in water (abst.), 4, 163: as evidence of adulteration of milk (abst.), 9, 13: reduction of, to ammonia in water analysis (abst.), - - - - - 4, 163

Nitrating under various conditions (abst.), - - - - - 6, 309

Nitric acid, action of, on pentamethylbenzene (abst.), 10, 37: action of, on phenylisocrotonic acid (abst.), 7, 87: action of, on sugar, 9, 45: apparatus for determining (abst.), 9, 217: behavior of, with soda-lime (abst.), 1, 100: new compounds of, with ammonia (abst.), 4, 234: condensation of, 17, 576: determination of (abst.), 6, 240; 10, 192: determination of, as ammonia (abst.), P. 2, 9: determination of, by means of indigo, in water analysis (abst.), 1, 541: determination of, in lime juice (abst.), 1, 367: determination of, as nitric oxide (abst.), 1, 540; 4, 258: determination of, in the presence of acids which mask its reactions (abst.), 6, 239: determination of, rapid (abst.), 7, 293: determination of, according to Schulze-Tiemann (abst.), 12, 353: determination of, in soils (abst.), 4, 258: determination of, volumetric (abst.), 7, 61: distillation of, 17, 580: distillation of, from sodium nitrate and sulphuric acid, 13, 246: in healthy urine, and method for its determination, P. 2, 98: loss of, in leaden chamber process, etc. (abst.), 4, 73: oxidation of myristic acid with (abst.), 8, 205: titration of, for hyponitric acid, P. 2, 149; 1, 18

Nitric and chloric acids, color reactions of, with certain aromatic bodies, 19, 156: and hydrobromic acids, conversion of sulphides into sulphates by means of (abst.), 6, 33: and nitrous acids, detection of (abst.), 7, 61

Nitric nitrogen produced by the pea, 20, 793

Nitric oxide, absorbents of (abst.), 4, 160: action of the copper-zinc couple on (abst.), 5, 233: action of, on sulphur dioxide (abst.), 4, 72

Nitride, magnesium, production by smothered combustion of magnesium in air, P. 1, 2, 17

Nitrides. See Hydronitric acid.

Nitrification (abst.), 7, 23: oxidation of iodine in the process of (abst.), 7, 287

Nitrifying organisms, effect of acidity on development of, 18, 475

Nitriles, action of hydroxylamine on (abst.), 6, 160: action of organic acids upon, 20, 648: and carboxylic acids from aromatic amines (abst.), 6, 85: conversion of, into imides (abst.), 5, 123: from formanilide (abst.), 8, 74: preparation of, from amides, P. 2, 123: produced in destructive distillation of beet root residues (abst.), 1, 277

Nitrites, action of heat on, 5, 170: determination of (abst.), 10, 85: determination of, in water, 18, 21: in water, test for (abst.), 4, 163

Nitrites and nitrates, determination of, in water (abst.), 4, 163: reduction of, to ammonia in water analysis (abst.), 4, 163

Nitro compounds of the aliphatic series, constitution of (abst.), 8, 202, 274: behavior of, towards hydrogen sulphide (abst.), 2, 178: determination of nitrogen in (abst.), 7, 91

p-Nitro compounds, electrolytic reduction of, in sulphuric acid solution, 17, 855

Nitro derivatives of resorcinol (abst.), 5, 129

Nitro group in organic compounds, volumetric determination of, 19, 812

Nitro acids derived from ketones (abst.), 4, 208: of fatty series, preparation of (abst.), - - - - - 2, 291

Nitrocamphor, isomeric with camphonitrophenol (abst.), - - - - - 12, 71

Nitrocellulose, separation of, from nitroglycerol (abst.), 1, 366: soluble, manufacture of, - - - - - 17, 411

Nitrogen, ammoniacal, determination of, in soils (abst.), 6, 169: analysis of organic bodies containing (abst.), 2, 352: apparatus for determination of, modified (abst.), 4, 160: atmospheric, assimilation of, in cotton plant, 18, 425: atmospheric, assimilation of, a correction, 16, 432: atmospheric, assimilation of, by plant's, 12, 145: (abst.), 12, 72: atmospheric, fixation of (as cyanides, etc.), 11, 2, 31: atmospheric, fixation of, by soils, 8, 18; 10, 12: atomic weight of, 19, 362: atomic weight of, determination of, 18, 1045: chemistry of, as disclosed in the constitution of the alkaloids, 9, 128: chemistry of, literature on the, 9, 142: of coal, behavior of, during destructive distillation (abst.), 5, 95: and copper, double iodide of (abst.), 6, 34: density of, 16, 188; 20, 170: free, evolved by fermentation (abst.), 4, 267: free, formation of nitrous acid and ammonia from (abst.), 12, 350: and halogens, analysis of organic substances containing (abst.), 1, 337: nitric, produced by the pea, 20, 793: solidification of (abst.), 7, 27: stereochemistry of molecules containing (abst.), - - - - - 12, 166

Nitrogen, determination of, in agricultural analysis (abst.), 1, 281, 351: in aluminum, 18, 771: in coal and coke (abst.), 5, 95: by combustion with calcium hydroxide (abst.), 6, 168: by Dumas' method, apparatus for (abst.), 1, 375: error in, 20, 961: in explosive ethereal nitrates (abst.), 1, 102, 542: in fertilizers (abst.), 1, 279; 9, 13: in fertilizers containing nitrates, 17, 567: (abst.), 1, 356: in fertilizers, the Gunning method for, 16, 795: in guano (abst.), 1, 355: in horn, etc. (abst.), 1, 542: by Kjeldahl method (abst.), 7, 179; 8, 81; 10, 45: by Kjeldahl method, in aromatic compounds, 7, 108: by Kjeldahl method, digestion furnace for (abst.), 7, 291: by Kjeldahl method, error in, 13, 212: by Kjeldahl method, modified (abst.), 11, 54: new method for (abst.), 8, 25: in milk and urine of herbivora (abst.), 8, 279: in nitrates and nitro compounds (abst.), 7, 91: in nitroglycerol (abst.), 1, 102: in organic elementary analysis (abst.), 1, 254, 336, 542; 5, 243: in organic elementary analysis, modification of Schiff's apparatus for (abst.), 1, 375: by Ruffle's method (abst.), 6, 96: in steel (abst.), 1, 562: safety tube for, 18, 227: in waters, 9, 162: in waters, beer, etc., (abst.), - - - - - 4, 162

Nitrogen iodide (abst.), 1, 112: iodide, researches on (abst.), 6, 34: monoxide, density of, 20, 170: oxides (abst.), 7, 200: oxides, estimation of, as ammonia (abst.), 4, 160: oxides, heat of formation of (abst.), 2, 433: tetroxide, behavior of, with sulphuric acid (abst.), 4, 265: trioxide dissolved in carbon disulphide, action of, upon various organic compounds, - - - - - 12, 7, 54

Nitrogenous constituents of barley and malt (abst.), 6, 173: content of oats, influence of vegetable mold on, 19, 605: principles of vegetable soil (abst.), - - - - - 9, 104

Nitroglycerol, detonating submerged, P. 1, 2, 2: determination of nitrogen in (abst.), 1, 102: the manufacture of, 17, 263: separation of, from nitrocellulose (abst.), - - - - - 1, 366

Nitronaphthalenes, commercial preparation of, - - - - - 19, 532

Nitrophenol, Fittica's fourth (abst.), - - - - - 2, 371

Nitroprusside, sodium, preparation of, - - - - - 19, 23

Nitrosaccharose, 4, 147: correction, - - - - - 4, 186

iso-Nitroso compounds (abst.), - - - - - 5, 65; 9, 195

Nitroso-o-cresol (abst.), - - - - - 7, 55

Nitroso derivatives of aromatic diamines (abst.), - - - - - 8, 55

Nitrosophenol, action of ammonia on (abst.), 7, 86: ethers of (abst.), 7, 87

Nitrophenols (abst.), - - - - - 7, 230

Nitrosyl chloride, action of, on unsaturated hydrocarbons (abst.), 1, 170

Nitrous acid, action of, on resorcinol diethyl ether (abst.), 1, 161: and ammonia, formation of, from free nitrogen (abst.), 12, 350: behavior of diamines with (abst.), 6, 162: detection of (abst.), 1, 105; 6, 288; 7, 61: estimation of, gasometric (abst.), 10, 67: estimation of, in potable waters, etc., 1, 136: estimation of, volumetric (abst.), 6, 170: presence of, in the atmosphere (abst.), - - - - - 12, 69

Nitrous anhydride, action of, on glycerol (abst.), 5, 233: action of, on organic compounds, 12, 7, 54; 13, 111: existence of, in form of vapor (abst.), - - - - - 4, 266

Nitrous oxide, determination of (abst.), - - - - - 4, 160

Nomenclature and notation, report on, 8, 116: of alkaloidal salts 11, 130

Non-metals, action of, on alkaline selenocyanates (abst.), - - - - - 8, 179

North Carolina Section, meetings of, 18, (60), (97); 19, (22), (49); 20, (73)

North Eastern Section, meeting of, - - - - - 20, (45)

North Sea expedition, results of Norwegian (abst.), - - - - - 1, 496; 2, 289

Norwegium (abst.), 2, 224: in American lead, 2, 213: atomic weight and properties of (abst.), 1, 527: properties of (abst.), - - - - - 1, 398

Nux vomica, alkaloids of (abst.), - - - - - 5, 95; 7, 116

Oat kernel, proteids of, - - - - - 18, 621

Oats, influence of vegetable mold on the nitrogenous content of, - - - - - 19, 605

Octylbenzene, β -amido (abst.), - - - - - 7, 176

Octyltoluene, amido- (abst.), - - - - - 7, 176

④Enanthaldehyde, compounds of with aniline, xylidine, and naphthylamine, 5, 2: on the condensation products of (abst.), 5, 94: and ④enanthyl chloride, action of, on dimethylaniline in the presence of zinc chloride (abst.), - - - - - 9, 7

④Enanthylaniline, ④enanthalxylylidine, and ④enanthalnaphthylamine (abst.), - - - - - 5, 66

④Enocyanine (abst.), - - - - - 5, 119

④Enogallic acid, determination of, in wines (abst.), - - - - - 4, 191, 233

Oil, device for weighing, - - - - - 16, 882

Oil, almond, unreliability of test for (abst.), 8, 87: from artificial butter, specific gravity of (abst.), 4, 188: castor, products of oxidation of (abst.), 8, 110: castor, solid residue from the distillation of, *in vacuo*, 5, 4: cocoanut, relation of, to methods of butter analysis, 7, 188: cod liver, examination of (abst.), 10, 70: of corn, 20, 948: cotton-seed (abst.), 8, 206: cotton-seed, adulteration of, with tallow (abst.), 10, 86: creosote, estimation of phenol in (abst.), 6, 38: earth-nut, sensibility of, to heat when electrified (abst.), 10, 173: essential, of *Licari kanali* (abst.), 4, 233: essential, of *Satureia hortensis*, occurrence of carvacrol in (abst.), 5, 24: essential, of savory (*Satureia Montana*) (abst.), 4, 77: of geranium, detection of adulterations in (abst.), 1, 105: Indian geranium (abst.), 12, 234: Japanese camphor (abst.), 6, 313: lemon (abst.), 7, 247: of malt, note on, 7, 22: mineral, detection of, in fatty oils and fuller's grease (abst.), 8, 38: mineral, detection of, in resin oil, 8, 65: mineral, purification of, with sulphurous acid (abst.), 8, 206: olive, adulteration of (abst.), 8, 40: distinction of, from cotton-seed oil (abst.), 4, 192: olive, test for (abst.), 7, 250: petroleum, on explosions of, etc., P. 1, 115: rosin, quantitative separation of, from mineral oils, 16, 385: sesame, detection of (abst.), 9, 177: see also, Kerosene; Turpentine.

Oil and fat, detection of hydrocarbons in (abst.), 8, 86: and moisture determination of, in linseed cakes, etc., - - - - 16, 114
 Oil-cake, determination of fat in (abst.), - - - - 10, 157
 Oil-cakes used in feeding, contributions to study of, - - - - 15, 656
 Oil-gas, 16, 688: use of, in blast lamp (abst.), - - - - 1, 91
 Oils, action of, on polarized light (abst.), 9, 176: action of sulphur chloride on (abst.), 10, 116: apricot, peach, and walnut (abst.), 8, 184: bromine and iodine absorption of (abst.), 8, 100: California vegetable, properties of, 17, 935: cereal, heat of combustion of, 20, 309: coefficient of expansion of (abst.), 8, 99: commercial, analysis of (abst.), 2, 433: containing unsaponifiable fats, examination of (abst.), 8, 39: determination of fatty acids in (abst.), 6, 100: determination of glycerol in (abst.), 8, 102, 104: determination of heat of bromination of, 18, 378: determination of sulphur in (abst.), 10, 44: essential, chemistry of (abst.), 7, 121: essential, constituents of some (abst.), 7, 121: essential, detection of adulterations of (abst.), 1, 368: essential, detection of alcohol in (abst.), 1, 582: essential, of some *Ericeae*, components of (abst.), 1, 395: essential, and terpenes (abst.), 7, 246: free fatty acids in (abst.), 11, 55: fatty, detection of, in mineral oils (abst.), 7, 226: fatty, determination of glycerol produced by the saponification of (abst.), 8, 204: fatty, on the solidification of (abst.), 6, 198: fatty, solubility of iodine in (abst.), 7, 202: fixed, examination and chemistry of (abst.), 8, 98, 103: lubricating, analysis of, 15, 265: marine, analysis of, 11, 155: Mauméne's test for (abst.), 8, 108: mineral, detection of fat oils in (abst.), 8, 39: mineral lubricating,

agent for thickening (abst.), 8, 109: mineral, quantitative separation of rosin oil from, 16, 385: oxidation of (abst.), 8, 106: specific gravity of (abst.), 8, 98: titration of, by means of hypobromite solution (abst.), 6, 99: Valenta's acetic acid test for (abst.), 8, 101, 103: vegetable, examination of (abst.), 10, 70: viscosity of, instrument for measuring, 15, 173, 454: viscosity of, method of determining (abst.), 7, 93; 8, 85: see also Mustard oils.

Oils and fats, analysis of (abst.), 10, 194: determination of solid fat in 18, 259: formation of basic salts in the saponification of (abst.), 8, 41: Koettstorfer figure of dark-colored, 16, 408: methods of testing, 15, 153: Muter's method for analysis of, 15, 110: quantitative estimation of (abst.), - - - - - 6, 245

Oils and grease, improvements in bleaching or purifying (abst.), - - - - - 8, 43

Oleic acid, action of sulphuric acid on (abst.), 8, 85: conversion of, into palmitic (abst.), 7, 64: oxidation of, by potassium permanganate (abst.), 7, 207; 8, 42: quantitative separation of, from stearic acid (abst.), - - - - - 1, 360

Oleomargarine, detection of, - - - - - 3, 83

Oleum cynae (abst.), - - - - - 7, 122

Onions, analysis of, - - - - - P. 1, 2, 60

Opium, determination of morphine in, 7, 45; 10, 143: (abst.), 4, 194; 7, 33; 10, 45: separation of the alkaloids of (abst.), - - - - - 9, 176

Opium alkaloids, solubility of (abst.), - - - - - 9, 216

Optically inactive compounds, splitting of (abst.), - - - - - 6, 90

Orange, bitter, proximate principles of (abst.), - - - - - 8, 202

Orcinol, new isomer of (abst.), 4, 227: and some other dihydroxytoluenes (abst.), - - - - - 5, 61

Ores, determination of sulphur in (abst.), 1, 560: zinc, analysis of, 11, 49

Organic acid obtained by the action of alcoholic potassium hydroxide on a mixture of chloroform and acetone (abst.), - - - - - 9, 102

Organic compounds, synthesis of, by electrolysis (abst.), - - - - - 4, 239

Organic matter, determination of, by oxidation in the wet way, 15, 71: effect of decomposing, on natural phosphates, 14, 353: in fertilizers, oxidation of, by *aqua regia*, 17, 86: methods of estimating, by reduction of potassium permanganate (abst.), 6, 41: in water, differentiation of, 20, 497: in water, direct oxidation of, - - - - - 14, 233

Organization of the American Chemical Society, - - - - - P. 1, 3, 18

Orpine, peculiarities of commercial (abst.), - - - - - 8, 97

Orsat's apparatus for estimation of oxygen (abst.), - - - - - 6, 97

Orthodiketones, color reaction for (abst.), - - - - - 8, 58

Orthosilicic acid, existence of, - - - - - 19, 832

Osmotic pressure, - - - - - 20, 579

Oxalate, acid ammonium, influence of, on the solubility of neutral oxalate (abst.), - - - - - 8, 71

Oxalic acid (abst.), 2, 430: action of, on chlorates, bromates, and iodates (abst.), 1, 384: action of potassium permanganate upon, P. 2, 153: formation of, in plants (abst.), 9, 7: oxidation of, by

cupric ammonium solution (abst.), 1, 490: produced in oxidation of animal substances (abst.), 1, 106: reaction between, and ferric salts (abst.), 8, 198: surface-tension of solutions of, 20, 129; synthesis of (abst.), 5, 50: in vegetation (abst.), - - - - - 8, 37
 Oxalines and glyoxalines (abst.), - - - - - 5, 19
 Oxime, a new quinone, - - - - - 13, III
 Oxides, metallic, reduction of, at high temperatures, 20, 232: reduction of, in sunlight, - - - - - 4, 3
 Oxycellulose for the determination of vanadium (abst.), - - - - - 8, 78
 Oxycelluloses, the natural, - - - - - 18, 8
 Oxydiphenyl bases (abst.), - - - - - 10, 18
 Oxygen, action of, upon zinc ethide (abst.), 12, 156: new absorbent for (abst.), 7, 177: active (abst.), 4, 207: active, in barium dioxide, determination of (abst.), 2, 132: active, production of (abst.), 5, 19: in air, apparatus for determining (abst.), 1, 585: atomation of, 5, 205: atomation of, at elevated temperatures, 6, 17: atomic weight of, 19, 360: compounds, reduction of, by magnesium (abst.), 12, 152: density of, 16, 188; 20, 170: density and atomic weight of, 18, 198: determination of atomic weight of (abst.), 6, 48: and the halogens, relative affinities of (abst.), 1, 280: improved form of Orsat's apparatus for estimation of (abst.), 6, 97: some industrial application of (abst.), 10, 197: liquid, as a cooling agent (abst.), 7, 27: nascent, conversion of carbon monoxide into carbon dioxide by, 5, 78: preparation of, continuous (abst.), 8, 21: relative affinity of, for hydrogen and carbon monoxide (abst.), 1, 164: sulphur, and halogens, combined with hydrogen, reciprocal displacements of (abst.), 1, 385: volumetric estimation of, by means of phosphorus (abst.), 1, 372: in water, determination of (abst.), - - - - - 2, 172
 Oxymorphone, Schützenberger's (abst.), - - - - - 2, 98
 Oxyphenylacetic acid. See Phenoxyacetic acid.
 Oxyphenylpropionic acid. See Phenoxypropionic acid.
 Oxypropyltoluidine (abst.), - - - - - 4, 206; 5, 29, 58
 Oxsulphides, organic, action of chlorine on (abst.), - - - - - 4, 263
 Ozokerite and ceresine from Galicia, - - - - - P. 1, 121
 Ozonator, 1, 8: new and powerful form of, - - - - - 1, 431
 Ozone, action of, on carbon monoxide, 1, 450: action of, on coloring-matter of plants, 1, 228: action of, on manganese salts (abst.), 4, 234: action of, on organic substances, 1, 447: bleaching of syrups by, 1, 229: constitution of (abst.), 18, 286: determination of, in the air (abst.), 4, 162: efficiency of various means of producing, 1, 431: and electricity, researches on (abst.), 1, 171: formation of, during slow oxidation of phosphorus (abst.), 2, 351: and hydrogen dioxide (abst.), 2, 34, 59, 147: and hydrogen dioxide both produced by action of air on moist phosphorus 3, 5: liquefaction of (abst.), 4, 238: preparation of, by chemical methods 1, 442: not produced in crystallization of iodic acid, 1, 445: pro-

duction of, 1, 8: production of, by heating substances containing oxygen, 2, 411: relations between temperature and volume in producing, 1, 8: researches on (abst.), 4, 235, 237: solubility of, in water, 1, 220: thermochemistry of (abst.), 4, 266

Ozonization of air, products obtained in, 1, 145

Palissandre wood. See Rosewood.

Palladious chloride, carbamido- (abst.), 2, 137

Palladium, atomic weight of, 16, 184; 17, 208: behavior of, towards carbon monoxide or hydrogen (abst.), 5, 62: separation of, from mercury (abst.), 9, 12

Palladium double bromides, 16, 465: manganese bromide, 16, 468: potassium bromide 16, 466, 467: sodium bromide, 16, 467: strontium bromide, 16, 467

Palm nut meal, determination of fat in (abst.), 8, 28

Palm wine, composition of (abst.), 1, 402

Palmella cruenta, coloring-matter of (abst.), 1, 403

Palmitic acid, conversion of oleic acid into (abst.), 7, 64

Pancreatic juice, action of, on starch and glycogen (abst.), 1, 173, 273

Pansy, estimation of amount of salicylic acid in (abst.), 6, 233

Papaverine, new test for (abst.), 1, 545

Paper hangings, amounts of arsenic found in various, 2, 339

Paper pulp, preparation of (abst.), 5, 122

Parabanic series, new derivative of (abst.), 1, 487

Paraffin, facts about (abst.), 12, 157: specific gravity of (abst.), 5, 236: use of, as absorbent of vapors of ether, chloroform, benzene, and carbon bisulphide (abst.), 1, 585

Paraffin oil, detection of, in lard (abst.), 4, 192: shale deposit, recent discovery of, in Servia (abst.), 6, 244

Paraffins, new (abst.), 7, 66: preparation of (abst.), 5, 130

Paraxanthine (abst.), 5, 65

Patent law, (English) as amended in 1883 (abst.), 6, 26: discussion of preceding paper on (abst.), 6, 31

Patents, abstracts of American, relating to chemistry, 1, 121, 177, 260, 306, 405, 457, 504, 590; 2, 66, 100, 138, 189, 227, 295, 353, 372, 402, 437, 457; 3, 63, 157; 6, 50, 107, 143, 176, 201, 246, 292, 314; 7, 34, 67, 94, 125, 151, 181, 215, 232, 252, 297; 8, 29, 44, 66, 88, 111, 168, 185, 207, 234, 280; 9, 18, 39, 49, 78, 105, 124, 157, 178, 203, 225; 10, 29, 48, 73, 94, 118, 160; 12, 18, 50, 74, 121, 177, 236, 355, 416, 478, 505; 13, 66, 107, 127, 145, 171, 185, 218, 239, 255, 294; 14, 17, 36, 71, 117, 138, 160, 233, 287, 318, 381; 15, 48, 116, 179, 236, 355, 415, 475, 591, 711; 16, 67.

Patents, abstracts of foreign, relating to chemistry, 1, 117, 174, 296, 404, 455, 498, 587; 2, 68, 102, 141, 191, 230, 299, 355, 375, 405, 439, 459; 3, 70, 172; 4, 38, 78, 108.

Pea, production of nitric nitrogen by the, 20, 793: proteids of the, 18, 583; 20, 348, 410

Peas, split, adulteration of (abst.), 9, 38

Peach oil (abst.), 8, 184: kernel, proteids of the, - - - - - 18, 613
 Pegmatite from Hindustan, presence of diamonds in (abst.), - - - - - 6, 105
 Pelagine, composition of, - - - - - 17, 877
 Penetration machine, the, an explanation, - - - - - 17, 218
 Pennant grits, composition of (abst.), - - - - - 4, 144
 Pentabrombenzenesulphonic acid (abst.), - - - - - 2, 186
 Pentaerythrol, - - - - - 15, 706
 Pentaglycerol, - - - - - 15, 707
 Pentamethylbenzene, action of nitric acid on (abst.), - - - - - 10, 37
 Pentathionate, potassium, experiments on (abst.), - - - - - 4, 224
 Pentathionate, preparation of (abst.), - - - - - 5, 233
 Pentathionic acid (abst.), 4, 199: note on (abst.), - - - - - 5, 234
 Pentosans, determination of, in food-stuffs, 19, 193: determination of true, 19, 304: solubility of, in the reagents employed in the estimation of starch, 20, 266: of wheat, - - - - - 19, 292
 Pentoses, not formed by assimilation process, - - - - - 15, 618
 Pepper adulterant, new (abst.), 10, 195: adulteration and analysis (abst.), - - - - - 10, 70
 Peppermint oil and some of its derivatives (abst.), 4, 144: plants, treatment and distillation of (abst.), - - - - - 10, 117
 Pepsin, insoluble modification of (abst.), - - - - - 4, 237
 Pepsin tests, relative value of, - - - - - 10, 51
 Peptides in blood and urine (abst.), 8, 231: chemical character of, and separation from albumin (abst.), 10, 157: commercial, analysis of (abst.), - - - - - 11, 55
 Perchloric acid, as reagent for alkaloids (abst.), - - - - - 1, 545
 Perchromic acid, new solvents for, - - - - - 17, 41
 Periodic function, atomic volume as a, - - - - - 20, 935
 Periodic law, an early American arrangement of the elements, 17, 947: history of (abst.), 2, 225: modified arrangement of elements, 17, 75: see also Perissad law.
 Periodicals, chemical, received by the American Chemical Society - 12, 510
 Periodide of triphenylbrommethane, - - - - - 20, 790
 Periodides, the, 17, 775: of alkaloids, 20, 706: of atropine, 20, 329: of pyridine, - - - - - 17, 859
 Perissad law, - - - - - 12, 426
 Permanganate, lead oxalate for standardizing (abst.), 1, 586: oxidation of quinine by, 1, 80: production of, by combustion of manganese, 18, 230: see also Potassium permanganate.
 Permanganates, composition of the alkaline (abst.), - - - - - 8, 272
 Pernitric acid, composition and molecular weight of (abst.), - - - - - 4, 237
 Persian berries, coloring matter and glucoside sugar of (abst.), - - - - - 2, 62
 Persulphuric acid, formation of, by electrolysis (abst.), 2, 362: heat of formation of (abst.), - - - - - 2, 363
 Petrocene, - - - - - 1, 114
 Petroleum, action of, on lead (abst.), 10, 92: American, hydrocarbons obtained from (abst.), 1, 384: American, hydrocarbons and higher

alcohols obtained from (abst.), 6, 95: artificial production of, 15, 379: by-products, the nature of certain (abst.), 1, 277: crude, three samples of, 13, 179: detection of aromatic compounds in (abst.), 6, 95: determination of flashing point of (abst.), 5, 53: determination of naphtha in, P. 1, 119: and its examination, 1, 188: inclusion of, in quartz crystals, 20, 795: Lilienfein's lamp for low boiling (abst.), 6, 106: Ohio, 13, 168: Pennsylvania, P. 1, 91

Petroleum coke, substances contained in (abst.), 2, 435: oil, explosions of, etc., P. 1, 115: oil, testing of, P. 1, 115: tar residues, utilization of, by Rave's process (abst.), 10, 93

Pharmaceutical preparations made in United States, 15, 566

Phaselin, a proteid of the kidney bean, 16, 707, 757

Phaseolin, a proteid of the kidney bean, 16, 635

Phenacetine, identification of, 17, 933

Phenanthraquinone (abst.), 2, 48: action of acetyl chloride on (abst.), 4, 221: action of aldehydes on (abst.), 4, 198: action of phosphorus chlorides on (abst.), 5, 69: condensation product of, with ethyl acetoacetate (abst.), 5, 92

Phenanthrene, constitution of (abst.), 1, 395; 2, 45, 347: heat of solution of, 18, 153, 156

α - and β -Phenanthrenecarboxylic acids (abst.), 2, 347

Phenanthrenedisulphonic acid and some derivatives (abst.), 2, 367

Phenthrenesulphonic acid, a new, 2, 203

β -Phenanthrolsulphonic acid, 6, 155

Phenetol, ρ -amido- and ρ -nitro-, note on (abst.), 1, 485

Phenol, action of allyl iodide on, in the presence of lime or aluminum foil (abst.), 5, 234: action of nitrogen trioxide on, 12, 9: determination of (abst.), 4, 196: determination of, in crude carbolic acid (abst.), 8, 79: determination of, in creosote oil (abst.), 6, 38: determination of, volumetric (abst.), 1, 581: dye-stuffs from (abst.), 7, 229: occurrence of, in the stem and leaves of *Pinus sylvestris* (abst.), 6, 93: oxidation of, by means of nitrobenzene (abst.), 7, 207: reagent for (abst.), 1, 339, 546: synthesis of homologues of (abst.), 4, 205

Phenol, *o*-amido-, a new dye-stuff from (abst.), 1, 493: *o*-amido-, triphenodioxazine by oxidation of (abst.), 12, 162: benzyl-, and its derivatives (abst.), 4, 204: ρ -brom-*o*-amido- (abst.), 7, 246: chlorodinitro-, and an aniline derivative of α -chlordinotrophenol, P. 2, 111: *o*-cyano- (abst.), 10, 38: dichlorazo-, constitution of (abst.), 1, 493: nitro-, on a, called camphonitrophenol (abst.), 12, 71: nitro-, Fittica's fourth (abst.), 2, 371: nitroso-, a few ethers of (abst.), 7, 87: perchlor-, from perchlorbenzene (abst.), 7, 228: tribromo-, brominated (abst.), 7, 145

Phenols, action of diazoanisoil chloride on, 5, 32, 55: action of diazo- β -naphthalene on, 6, 151: determination of, volumetric (abst.), 12, 477: high boiling, in coal tar (abst.), 7, 57, 120: polyhydric, heat

of neutralization of (abst.), 7, 119: substituted, oxidation of (abst.), 2, 223: thermochemical relations of (abst.) 8, 34

Phenols, bromamido- (abst.), 7, 246: nitro-, brominated, benzyl ethers of and their behavior on reduction (abst.), 7, 245: nitroso- (abst.), 6, 287; 7, 230: nitroso-, action of ammonia on (abst.), - - - 7, 86

Phenolates of amido-bases (abst.), - - - - 5, 100

Phenolethers, Friedel-Craft's synthesis of ketones from (abst.), - 12, 227

Phenolglucoside, synthesis of (abst.), - - - - 1, 403, 2, 42

Phenolglycolic acid, preparation of (abst.), - - - - 1, 496

Phenolic hydrogen, substitution of bromine for (abst.), - - - - 7, 145

Phenoasfranine (abst.), - - - - 9, 170

Phenoxyacetic acid (abst.), 1, 294: and derivatives (abst.), - - - 2, 292

Phenoxypropionic acid (abst.), - - - - 1, 296

Phenyl cyanate (abst.), 7, 174: mercaptide, sodium-, behavior of, with isobutylenebromide (abst.), 12, 229: mustard oil glycolide (abst.), 2, 226: mustard oil, *m*-nitro- (abst.), - - - - 5, 128

Phenylacetic acid, derivatives of (abst.), - - - - 2, 348

Phenylacetylene, syntheses by means of (abst.), 4, 206: and its derivatives, syntheses by means of (abst.), - - - - 4, 176

Phenylacridine (abst.), - - - - 6, 238

Phenylamidopropionic acid, note on (abst.), - - - - 1, 243

Phenylangelic acid, formation of (abst.), - - - - 7, 143

Phenylarsenic acid, action of, on the animal organism (abst.), - 1, 159

Phenylboron chloride (abst.), 2, 96: and its derivatives (abst.), - 4, 206

Phenylbromacetic acid, action of, on ethyl acetoacetate (abst.), 6, 85

Phenylbromlactic acid (abst.), - - - - 2, 366

Phenylenediamine, action of ethyl chloracetate on (abst.), - - - 4, 267

p-Phenylenediamine (abst.), - - - - 1, 162

Phenylglyoxylic acid, color reactions for (abst.), - - - - 1, 543

Phenylhydrazine, action of benzal acetoacetic ester on (abst.), 8, 55: action of, upon the imido-ethers (abst.), - - - - 6, 235

Phenylisocrotonic acid, action of nitric acid on (abst.), - - - - 7, 87

Phenyllactic acids (abst.), - - - - 2, 366

Phenylmesitylenecarbinol and its principal ethers (abst.), - - - 8, 53

Phenylmethacrylic acid, formation of (abst.), - - - - 7, 143

Phenylnitroethylene (abst.), - - - - 7, 87

Phenylthiocarbimide glycolide (abst.), - - - - 2, 226

Phloroglucin, action of chlorine on (abst.), 12, 159: isomers of (abst.), 2, 436: Weselky's reaction for, - - - - 1, 338

Phorone from glycerol (abst.), - - - - 4, 176

Phosphate, alum-, baking powders - - - - 12, 452

Phosphates, action of heat on, 5, 173: alkaline, behavior of, towards some indicators (abst.), 5, 53: aromatic, preparation of (abst.), 5, 18: decomposition of, by sodium acid sulphate, 7, 238; 8, 32: determination of iron and alumina in, 17, 260; natural, effect of decomposing organic matter on, 14, 353: reversion of (abst.), 2, 131, 133: reverted, determination of, 4, 113: (abst.), 4, 224: see

also Superphosphates.

Phosphatic slags, mechanical analysis of, - - - - - 19, 19

Phosphides, metallic (abst.), - - - - - 1, 168

Phosphine, action of, on carbon bisulphide (abst.), 2, 171: combinations of, with chloral hydrate (abst.), 8, 199: combinations of, with cuprous chloride (abst.), 1, 386: determination of (abst.), 1, 386: determination of, by absorption (abst.), 1, 372: spontaneously inflammable (abst.), - - - - - 12, 224

Phosphine, diphenyl-, and triphenyl- (abst.), - - - - - 5, 22

Phosphonium chloride (abst.), 2, 88: chloride and bromide, heat of formation of (abst.), 2, 89: iodide, action of, on carbon bisulphide (abst.), - - - - - 2, 171

Phosphor-bronze, analysis of, 19, 396: manufacture of, - - - - - 19, 393

Phosphor-copper, analysis of, - - - - - 19, 396

Phosphor-tin, analysis of, - - - - - 19, 396

Phosphorescence, violet, calcium sulphide with (abst.), - - - - - 8, 199

Phosphoric acid, existence of, in ammonium molybdate (abst.), 6, 98: glacial, detection of sodium phosphate in (abst.), 10, 66: manufacture of (abst.), 2, 434: observations concerning precipitation of, as phosphomolybdate, 17, 43: preparation of (abst.), 8, 70: reducing action of zinc on ammonium phosphomolybdate, 17, 747: reversion of (abst.), 6, 168: reversion of, by heat, 6, 229: saturation of, by bases (abst.), 4, 232: separation of, from boric acid, 19, 386: separations of, from metals (abst.), 1, 532: in soils, on (abst.), 6, 137: in soils, in northern France, amounts of (abst.), - - - - - 4, 77

Phosphoric acid, determination of, actual accuracy of, 18, 812: by citrate method, for small quantities, 17, 513: of citrate-soluble, as phosphomolybdate, 16, 304: comparison of methods and results, 16, 462: (abst.), 6, 241; 7, 179: in contaminated waters (abst.), 9, 174: in fertilizers (abst.), 6, 241; 7, 210: in fish guano (abst.), 1, 355: in fodders, 19, 320: as magnesium phosphate, with alkalimetric titration (abst.), 1, 281, 352: as magnesium pyrophosphate, 4, 135; 16, 289: (abst.), 1, 353, 537; 2, 220; 5, 243; 7, 178: by molybdate-magnesia method, 16, 793: (abst.), 1, 538: reverted (abst.), 1, 355; 4, 163; 7, 178: reverted, Mohr's improvements in, remarks on (abst.), 7, 179: in soils, 17, 295: (abst.), 6, 194: in superphosphates, P. 2, 64: in Thomas slags (abst.), 9, 119: by titration of phosphomolybdate with alkali (Pemberton's method), 15, 382; 16, 278; 17, 178; 18, 389; 19, 703: by titration, etc., compared with gravimetric determination, 16, 282, 765; 17, 941, 950: by titration of phosphoric acid with molybdic solution (abst.), 4, 164: by titration of phosphoric acid with uranium solution (abst.), 1, 356; 4, 164; 9, 118: in urine (abst.), 4, 196: by weighing phosphomolybdate, 18, 23: (abst.), 1, 538; 5, 52: in sweet wines (abst.), - - - - - 11, 53

Phosphoric anhydride, apparatus for preparing (abst.), - - - - - 9, 175

Phosphorous anhydride, decomposition of, by sunlight (abst.), - - - - - 6, 44

Phosphorus, attempt to find the amount of, in three samples of

steel, 16, 217: black (abst.), 4, 272: determination of, in aluminum solders, 18, 777: in iron and steel, condition of, 16, 477: imperfectly oxidized, in urine (abst.), 6, 129: note on liquid, 20, 303: oxidation of (abst.), 6, 44: in phosphor-bronze, note on, 15, 115: reduction of carbon dioxide by, at ordinary temperatures, 1, 230: in steel, influence of heat treatment and carbon upon solubility of, 19, 786: volumetric estimation of oxygen by means of (abst.), 1, 372

Phosphorus chloronitrides, 19, (43): chlorides, action of, on phenanthraquinone (abst.), 5, 69: iodides, molecular weight of (abst.), 4, 272: oxychloride, distinction of, from phosphorus trichloride (abst.), 12, 70: oxychloride from tricalcium phosphate (abst.), 5, 120: pentachloride, action of, on acetyl- and benzoyl-diphenylamine (abst.), 4, 264: pentachloride, action of, upon molybdenum trioxide, 16, 425: pentachloride, action of, on α -naphthylsulphonic acid (abst.), 4, 228: pentasulphide (abst.), 4, 227: pentasulphide, action of, on aniline (abst.), 10, 40: pentoxyde, apparatus for preparing (abst.), 9, 175: pentoxyde, as a drier for gases (abst.), 10, 67: sulphides (abst.), 6, 189: trichloride, combination of, with titanium tetrachloride (abst.), 2, 434: trisulphide, new sulphur salts derived from (abst.), - - - - - 6, 76

Phosphorus, determination of, in iron ores (abst.), 6, 193: in iron ores examination of methods for, 4, 88: of insoluble, in iron ores, 19, 614: in iron and steel, (abst.), 1, 104; 9, 8: by acidimetric titration of phosphomolybdate, 19, 792: actual accuracy of, 18, 811: with ammonium molybdate and magnesia, P. 1, 167: comparison of methods, 19, 100: error in, from use of *aqua regia* in dissolving, P. 1, 2, 58: modification of molybdate method for (abst.), 6, 193; 7, 294: by molybdate-magnesia method, note on, 20, 429: precipitation of phosphomolybdate in, 18, 170: in presence of arsenic, 16, 231: proposed standard method for (Dudley's), 15, 519; 16, 224, 234, 553; 17, 129; 18, 955: note on, 15, 480: in native copper (abst.), - - - - - 6, 241

Photochemical estimation of graded tint (abst.), - - - - - 10, 86

Photographic process by means of aniline black, 8, 189: a new (abst.), 12, 476

Photography, spectrum, in relation to quantitative analysis (abst.), 6, 243

Photometer, chemical (abst.), - - - - - 2, 173

Photometric measurements, new unit for (abst.), - - - - - 1, 373

Phthalic acid, amidobenzoic acid derivatives of (abst.), 7, 202: action of nitrogen trioxide on, - - - - - 12, 56

Phthalic anhydride, action of, on gallic acid (abst.), 4, 244, 296: action of, on naphthalene in presence of aluminum chloride (abst.), 1, 485: action of, on quinoline (abst.), 5, 67: and xylenes, acids produced from (abst.), - - - - - 5, 17

Phthalide, action of potassium cyanide on (abst.), - - - - - 7, 204

Phthalimide, - - - - - 18, 679

iso-Phthalophenone (abst.), - - - - - 2, 131, 367

Phthalylacetacetate, ethyl (abst.), - - - - - 5, 238

Phthalyl chloride (abst.), 7, 57: contributions to knowledge of (abst.), 2, 371

Physical chemistry, achievements and aims of, 16, 516: opening address before section of, World's Congress of chemists, 15, 601: problems of, 14, 360

Physical constants of compounds, relations between (abst.), 4, 264: of isomeric derivatives of xylene, relations of (abst.), 8, 178

Physical properties of chemical compounds (abst.), 6, 43: and chemical constitution, relations between, 2, 118

Physics and chemistry, borderland between (presidential address), 13, 11

Physics and chemistry, connection between (abst.), 8, 178

Pickles, examination of, for copper, 2, 340

Picoline, on commercial (abst.), 7, 146

Picraminic acid, action of cyanogen on (abst.), 4, 264

Picrate, acridine (abst.), 7, 84

Picric acid from morphine (abst.), 4, 76

Picrotoxin, characteristic reactions of (abst.), 1, 339

Picrylsulphonic acid, and its sodium salt (abst.), 7, 288

Pilocarpine, action of acids on (abst.), 4, 236: researches on (abst.), 4, 78

Pimelic acid, presence of, in the oxidation products of castor oil (abst.), 8, 110

Pinacone, constitution of (abst.), 2, 54

Pine tree sugar, 13, 228

Pinus sylvestris, occurrence of phenol in the stems and leaves of (abst.), 6, 93

Piperidine, contributions to knowledge of (abst.), 4, 262: observations on (abst.), 5, 131: oxidation of (abst.), 5, 133: synthesis of (abst.), 6, 162; 7, 86

Piperidine bases, phenylated (abst.), 9, 196: bromoselenate, 20, 576

Piperine, artificial (abst.), 5, 28

Pipette, a new automatic, 16, 643: new overflow, 5, 218: rapid measuring, 18, 905: for weighing liquids, 15, 190

Plant extracts, Schlösing's ammonia estimation process for (abst.), 6, 41

Plant fibres, analysis of some (abst.), 5, 92

Plant food in soils, estimation of, 20, 107: waste and conservation of (presidential address), 16, 1

Plant louse, honey from, 14, 350

Plants, cause of acridity in, 13, 215: chemical phenomena of the respiration of (abst.), 6, 232: chemical and microscopical researches on the cell contents of some (abst.), 5, 101: on the chemistry of (abst.), 6, 93: fixation of atmospheric nitrogen by (abst.), 12, 72: living, carbonates in (abst.), 8, 21: proximate analysis of (abst.), 2, 220

Plaster of Paris method in blowpipe analysis, some extensions of the, 18, 849

Plate towers of Lunge-Ruhrmann, 15, 361

Platinites, compound, and a new platinum potassium salt, 1, 472

Platinum, absorption of gases by (abst.), 4, 239: behavior of, towards carbon monoxide or hydrogen (abst.), 5, 62: filtering bulb of, 8, 17: recovery of, from residues (abst.), 1, 587: separation of, from antimony, arsenic and tin (abst.), 8, 278: separation of, from

antimony, arsenic and tin, qualitative (abst.), 10, 156: sponge, decomposition of ammonium nitrite by means of (abst.), 12, 473: study of salts of (abst.), 8, 176: volatilization of, in chlorine gas, 1, 479, 481

Platinum bromide (abst.), 2, 371: chloride, preparation of pure, 12, 140: chloride, recovery of waste, 19, 258: iodide as a reagent for deleterious organic substances in potable water, 5, 74: potassium mixed double halides, 18, 130: sulphocyanate (abst.), 2, 430: sulphocyanate, a new (abst.), 2, 363

Platinum black, preparation of very active (abst.), 12, 154: metals, action of hydrochloric acid and oxygen upon, 15, 272: metals, explosive alloys of, with zinc (abst.), 4, 240: retort, explosion of (abst.), 2, 130: vessels, soldering and repairing of (abst.), 7, 150

Poisoning by carbon monoxide, 10, 176: combined arsenical and antimonial, chemical history of, 17, 667

Poisonous honey, 19, (10)

Poisons, testing for, in saliva (abst.), 1, 402

Polariscope, exact determination of cane-sugar by, 1, 2: illumination for, with acetylene, 18, 179

Polariscopic apparatus, official methods for verifying, 20, 922

Polaristrobrometric chemical analysis, 11, 59, 80

Polarization. See Rotation.

Polarized light, action of oils on (abst.), 9, 176: action of solutions of cellulose on (abst.), 6, 93: for examination of the alkaloids of the quinine group, P. 2, 57

Polyporic acid, contributions to the knowledge of (abst.), 1, 258

Porcelain, Arita, raw materials used in, 2, 315

Porphyries, analysis of, 12, 134

Porpoise milk, composition of (abst.), 7, 290: fat of (abst.), 8, 184

Portland cement, chemical and physical examination of, 15, 181; 16, 161, 283, 323, 374

Potash bulbs, a new form of, 18, 941

Potash industry at Stassfurt (abst.), 6, 24

Potassium acid tartrate, determination of (abst.), 7, 295; 9, 120: amalgam, action of, on potassium tetra- and pentathionate (abst.), 4, 224: barium ferrocyanide, 20, 32: barium ruthenocyanide, 20, 30: bromoselenate, 20, 570: carbonate, determination of sodium compounds in (abst.), 4, 165: carbonate, Solvay process for production of (abst.), 4, 74: chlorate, action of ferric oxide on (abst.), 4, 142: chlorate, decomposition of, by heat in presence of manganese dioxide (abst.), 10, 187: chlorate, detection of nitrates in (abst.), 9, 174: chlorate, electrolysis of (abst.), 8, 19: chloride, influence of pressure and temperature in the action of, on methylamine carbonate (abst.), 9, 103: chlorobromoplatinites, 2, 196: cobaltocyanide (abst.), 1, 272: cyanide, action of, on phthalide (abst.), 7, 204: cyanide, action of, on potassium trichloracetate (abst.), 4, 231: cyanide, decomposition of, 6, 222:

dichromate, titration of (abst.), 4, 165: hydrindigotin sulphate and indoxylsulphate (abst.), 2, 371: hydroxide, action of, on lead oxide (abst.), 4, 237: hydroxide, action of, on potassium tetra- and pentathionate (abst.), 4, 224: hydroxide, action of, on resin (abst.), 8, 206: hydroxide, alcoloholate of (abst.), 8, 273: hydroxide, alcoholic, action of, on urea and derivatives (abst.), 8, 166: hydroxide, behavior of arsine towards (abst.), 12, 353, 477: indigo-white sulphate and indoxylsulphate (abst.), 2, 371: iodide, action of sulphuric acid on (abst.), 5, 232: iodide containing lead, behavior of, towards hydrogen sulphide (abst.), 1, 169: iodide, estimation of, in a complex organic mixture, 16, 157: iodide, quality of commercial, 16, 678: manganate, and some of its analytical uses (abst.), 9, 119: palladium bromide, 16, 466: perchlorate, electrolysis of (abst.), 8, 19: periodide (abst.), 1, 384: permanganate, action of, upon oxalic acid, P. 2, 153: permanganate, lead oxalate for standardizing (abst.), 1, 586: permanganate, methods of estimating organic matter by the reduction of (abst.), 6, 41: permanganate, oxidation of oleic acid by (abst.), 7, 207: permanganate, reaction of, with hydrogen dioxide, 11, 94: permanganate, titrations with (abst.), 7, 90: platinum mixed double halides, 18, 130: ruthenium nitrosochloride, 16, 389: ruthenocyanide, 18, 986: salts, volatility of, 19, 156: selenocyanate, action of iodine on (abst.), 6, 34: sesquicarbonate (abst.), 5, 66: silver haloid salts (abst.), 4, 235: sodium carbonate (abst.), 10, 77: sodium racemates (abst.), 8, 37: sulphate, heat of solution of (abst.), 7, 52: tetra- and pentathionate (abst.), 4, 224: trinitride, 20, 227

Potassium, determination of, 8, 12: actual accuracy of, 18, 817: as acid tartrate, P. 1, 98: in fertilizers, 17, 46, 47: in fertilizers, oxidation of organic matter for, 17, 86: in fodders, 19, 320: in fertilizers, sources of error in methods of, 16, 364: in kainite, 17, 85: the Lindo-Gladding method, 20, 597: platinichloride, 17, 453: without previous removal of iron and calcium, 20, 340: in silicates (abst.), 1, 536: small quantities of, 2, 145: volumetric of (abst.), - 1, 333, 536

Potato, determination of starch in (abst.), 10, 87: proteids of the, - 18, 575

Potato, sweet, carbohydrates of (abst.), 12, 351: examination of, - 1, 526

Pottery industry of the United States, chemistry of, - - - 15, 651, 695

Poultry, meat of, when fattened by the French process, - - - 12, 44

Powders, (smokeless) composition of, - - - - 15, 1

Powders, determination of specific gravity of (abst.), - - - - 1, 395

Praseodidymium, separation of, from iron, - - - - 20, 846

Praseodidymium molybdate, composition and solubility of, 17, 529: tungstate, composition and solubility of, - - - - 17, 528

Precipitates, determination of, without filtration, washing, and drying (abst.), 1, 84: new method of filtration and ignition of (abst.), 1, 582: separation and treatment of (abst.), - - - - 2, 43

Pressure, combustion under high (abst.), 12, 349: effect of, on crystallization and combination (abst.), 6, 38: formation of alloys by (abst.), - - - - - 4, 269

Pressure tubes (abst.), - - - - - 10, 69
 Pressure-regulator, for distillations, etc. (abst.), - - - - - 1, 250
 Prism, compound, of great dispersive power (abst.), - - - - - 1, 172
 Prisms, colored, as colorimetric standards, - - - - - 18, 484
 Problems, chemical, of to-day (address by Victor Meyer), - - - - - 11, 101
 Proceedings of American Chemical Society, P. 1, 20, 22, 83, 113, 133, 175, 177, 209, 225; P. 1, 2, 1, 18, 47, 66, 71, 72; P. 2, 1, 13, 34, 51, 69, 82, 115, 135, 137, 138, 145; 1, 1, 6, 37, 79, 127, 183, 383, 408, 461, 507; 2, 1, 73, 107, 145, 195, 233, 361, 379, 407, 443; 3, 1, 3, 24, 32, 34, 54, 81, 95, 108, 118; 4, 1, 10, 24, 34, 57, 87, 92, 211, 243, 290; 5, 1, 31, 71, 103; 6, 1, 3, 54, 111, 146, 180, 208, 282, 302; 7, 1, 39, 71, 99, 131, 157, 187, 221, 237, 259; 8, 1, 31, 69, 115, 209, 245; 9, 1, 21, 51, 127, 161, 181, 205; 10, 31, 97, 121, 161, 175, 185; 11, 1, 29, 57, 123, 139, 153; 12, 1, 25, 53, 79, 127, 183, 247, 252, 304, 367, 423, 481, 484; 13, 6, 63, 69, 109, 133, 151, 175, 191, 196, 227, 245, 261; 14, 1, 23, 43, 81, 125, 147, 169, 239, 311, 325, 326; 15, 55, 177, 296, 598: Note, after volume 15, see Council, Meetings, Directors, etc.
 Proceedings of World's Chemical Congress, - - - - - 15, 305
 Pronunciation and spelling of chemical terms, - - - - - 14, 63
 Propanes, dibrom-, the two isomeric (abst.), - - - - - 2, 181
 Propionic acid (abst.), 8, 275: derivatives of (abst.), - - - - - 2, 135
 Propionic acid, α -dibrom-, maleic and malic acids from (abst.), 2, 172: α -dichlor-, preparation of dichloradipic acid from (abst.), 8, 35: dichlor-, formation of, from glyceric acid (abst.), 2, 289: dichlor-, dichloradipic acid from (abst.), 8, 36: phenoxy- (abst.), - - - - - 1, 296
 Propyl alcohol, normal, compound of calcium chloride with (abst.), 12, 156: normal, from glycerol (abst.), - - - - - 2, 94
 iso-Propylacetylene, preparation of (abst.), - - - - - 10, 81
 Propylamine (abst.), - - - - - 12, 158
 β -Propylbenzoic acid, synthesis of (abst.), - - - - - 5, 20
 Propylenechlorhydrin (abst.), - - - - - 7, 118
 Propylideneacetic acid, contributions to the knowledge of, - - - - - 17, 17
 Propyl- and amylnaphthalene, preparation of (abst.), - - - - - 6, 164
 Propylsuccinic acid (abst.), - - - - - 4, 270
 iso-Propylsuccinic acid (abst.), - - - - - 4, 270
 Proteid of the adzuki bean, - - - - - 19, 509
 Proteid substances, determination of sulphur in (abst.), - - - - - 8, 60
 Proteids of the almond, 18, 610: of barley, 17, 539: of brazil-nuts, 18, 621: of the castor-bean, 18, 621: of the cocoanut, 18, 621: of cotton-seed, 16, 778: of the cow pea, 19, 494: of cow's milk, 13, 72: of cream, 20, 858: of the filbert, 18, 618: of the hazel-nut, 18, 618: of hemp seeds, 18, 621: of the horse-bean, 20, 393: of the kidney-bean, 16, 633, 703, 757: of the lentil, 20, 362, 410: of lupin seeds, 19, 454: of the maize kernel, 19, 525: of malt, 18, 542: of the pea, 20, 348, 410: of the peach seed, 18, 613: of the potato, 18, 575: of the rye kernel, 17, 429: of the soy bean, 20, 419: of squash seeds, 18, 621: of sunflower seeds, 19, 487: of the vetch, 20, 406,

410: of walnut seeds, 18, 616: of the wheat kernel, - 16, 524
 Protein compounds in milk, determination of (abst.), - 9, 48
 Protein, vegetable, heat of combustion of, - 20, 307
 Proteoses of malt, - 18, 549
 Protoplasm, living, reducing properties of (abst.), 5, 20: note upon Bütschli's experimental imitation of, - 12, 298
 Prussiates. See Ferrocyanide and Ferricyanide.
 Pseudocumene, nitro-, pseudocumidine, and pseudocumenol, holding the positions 1 : 3 : 4 : 5 (abst.), - 7, 249
 Pseudouric acid (abst.), - 1, 389
 Ptomaines, alleged reaction for (abst.), 4, 193: from fish (abst.), 7, 175: formation of, in cholera (abst.), 7, 80: found in the human cadaver (abst.), 1, 554: and leucomaines (abst.), - 9, 114
 Purpurin, oxidation of (abst.), - 7, 59
 Purpurins, the isomeric, chronology of, - 1, 184
 Purpurin alum solutions, effect of change of density on the absorption bands of, - 2, 362
 Putrefaction, contributions to the history of (abst.), 2, 343: of albumin, influence of carbohydrates etc. on (abst.), - 8, 230
 Pyknometer, a new, 3, 26: new form of, 19, 61: improved form of, - 19, 111
 Pyrazole, synthesis of (abst.), - 12, 233
m-Pyrazolones of Pinner and Lifschutz (abst.), - 10, 82
 Pyridine, action of bromine on (abst.), 4, 242: nicotinic acid from (abst.), - 4, 176
 Pyridine alkyl hydroxides, 18, 247: alkyl iodides, notes on some, 18, 91: bromoselenate, 20, 575: carboxylic acids (abst.), 2, 96; 6, 287: ethyl iodide, 18, 92: halides and perhalides, 19, 558: isopropyl hydroxide, 18, 249: isopropyl iodide, 18, 93: methyl iodide, 18, 91: periodides, 17, 859; 19, 322: propyl hydroxide, 18, 248: propyl iodide, - 18, 92
 Pyridine bases (abst.), 2, 89: bases, action of ethylene chlorhydrin on (abst.), 4, 272: compounds obtained by condensation (abst.), 6, 83: derivatives (abst.), 6, 83: derivatives, formation of, from malic acid (abst.), 7, 117: series, isomerism in (abst.), 6, 83: series, synthesis of alcohols in (abst.), - 12, 160
 Pyridine and piperidine, observations on (abst.), 5, 131: and piperidine bases, phenylated (abst.), 9, 196: and quinoline series, detection and determination of the bases of (abst.), - 7, 292
 Pyridinetricarboxylic acid from the alkaloids of the quinine group (abst.), - 2, 172
 Pyrite from York, Pa., - 15, 543
 Pyrites, composition of gaseous products in the combustion of (abst.), 7, 124: determination of arsenic in (abst.), 10, 66: determination of sulphur in, 16, 398; 17, 181, 397, 772; 18, 446, 685: (abst.), 4, 161: iron, synthesis of (abst.), - 12, 155
 Pyrocinchonic acid, preparation of, from α -dichlorpropionic acid (abst.), - 8, 35

Pyrococci, synthesis of (abst.), - - - - - 6, 86
 Pyrocresols, three isomeric (abst.), - - - - - 9, 195
 Pyrogallol, antiseptic qualities of (abst.), 1, 497: chlorination of (abst.), 6, 238: oxidation of, in presence of gum arabic (abst.), 4, 237
 Pyrogalloltriglycollic acid (abst.), - - - - - 1, 496
 Pyromeconomic acid (abst.), - - - - - 1, 294, 490
 Pyrophosphates, double, use of, in electrolytic separations (abst.), 12, 168
 Pyroracemic acid (abst.), - - - - - 2, 53
 Pyrosulphuryl chloride, preparation of (abst.), 5, 126: vapor density of (abst.), - - - - - 4, 78
 Pyrotartaric acid, behavior of, with bromine (abst.), - - - - - 6, 308
 Pyroxylin, chemical composition of (abst.), 2, 173: denitration of, 14, 112: heat of formation of (abst.), 2, 435: manufacture and applications of, - - - - - 15, 140; 16, 487, 543
 Pyrrhotite from Clayton, New York, analysis of, 4, 214: determination of, in pyrites, 18, 404: nickeliferous, constitution of, - - - - - 14, 369
 Pyrrol, action of acetic anhydride and benzoic anhydride on (abst.), 7, 84: action of cyanogen chloride on potassium compound of (abst.), 5, 64: blue dye-stuff from (abst.), - - - - - 6, 161
 Qualitative analysis, application of diphenylamine and aniline in (abst.), 5, 52: use of sodium peroxide in, - - - - - 19, 341
 Quantitative analysis, notes on, 12, 131: spectrum photography in relation to (abst.), - - - - - 6, 243
 Quantitative work for beginners in chemistry, - - - - - 16, 59
 Quartz, estimation of, in rocks and clays (abst.), 6, 239: petroleum inclusion in crystals of, - - - - - 20, 795
 Quercitrin and quercitin, identity of a coloring matter with (abst.), 4, 206
 Quicklime, determination of calcium oxide in, 16, 721: technical valuation of (abst.), - - - - - 1, 559
 Quinamine (abst.), - - - - - 2, 176
 β -Quinanisoil, derivatives of (abst.), - - - - - 7, 84
 Quinazole compounds (abst.), - - - - - 5, 238
 Quinine, estimation of, in quinine tannate (abst.), 12, 120: modification of the thalleoquin test for, 19, 331: oxidation of, by potassium permanganate, 1, 80, 169: oxidation products of (abst.), 1, 395: synthesis of (abst.), - - - - - 4, 236
 Quinine group, polarized light for examination of the alkaloids of P. 2, 57
 Quinine sulphate, analysis of commercial (abst.), 7, 226: detection of cinchonidine in (abst.), 8, 233: identification of - - - - - 17, 933
 Quinol, action of sulphuric acid on, and value of product as a developer, 13, 155: some derivatives of (abst.), 1, 161: sulphonic acids of (abst.), - - - - - 5, 239
 Quinolsulphonic acid, value of, as a developer, - - - - - 13, 155
 Quinoline, action of bromine on (abst.), 4, 242: action on chloroform and iodoform (abst.), 5, 66: action of ethylene chlorhydrin on (abst.), 4, 272: action of phthalic anhydride on (abst.), 5, 67: ammonium bases derived from (abst.), 7, 119: bases produced from

addition products of, with haloid ethereal salts (abst.), 4, 265; 5, 23: on the constitution of (abst.), 5, 61: derivatives of, (abst.), 5, 25, 52: halogen derivatives of (abst.), 4, 268: a homologue of (abst.), 7, 145: and lutidine (abst.), 4, 272: some substitution products of, 7, 222: synthesis of homologues of (abst.), - - - - - 2, 170

Quinoline, *m*-chlor-, derivatives of (abst.), 7, 229: *p*-dibrom- (abst.), 6, 236: diiodo- (abst.), 5, 24: α -hydroxy- (abst.), 5, 19: tetrabrom- (abst.), - - - - - 5, 24

Quinoline ring, formation of (abst.), - - - - - 12, 234

Quinoline and pyridine series, detection and determination of the bases of (abst.), - - - - - 7, 292

β -Quinolinedisulphonic acid (abst.), - - - - - 10, 21

β -Quinolinesulphonic acid (abst.), - - - - - 6, 236

Quinone, action of amines on (abst.), - - - - - 8, 23

Quinones, action of acid chlorides and bromides on (abst.), 5, 19: action of amines on (abst.), 4, 226, 265: reaction used to determine constitution of (abst.), - - - - - 4, 199

β -Quinonedicarboxylic ester, derivatives of (abst.), - - - - - 9, 213

Quinoneoxime, new, - - - - - 13, III

Quinoxaline (abst.), - - - - - 6, 308

Racemates, sodium and potassium (abst.), - - - - - 8, 37

Racemic acid (paratartaric acid), relative solubilities of dextro- and levo-components of salts of (abst.), - - - - - 6, 90

Raffinose, occurrence of, in American sugar beets, - - - - - 19, 116

Rain-water, action of impure, on lead pipes, - - - - - P. 1, 66

Rain-waters, tropical, proportions of chlorine and nitrogen in - - - - - 19, 1

Raphides, cause of acridity in plants, - - - - - 13, 215

Rape-seed cake, detection of foreign seeds in (abst.), - - - - - 4, 193

Reaction, velocity of, between ferrous chloride, potassium chlorate, etc., - - - - - 19, 199

Reactions, velocity of (abst.), - - - - - 2, 368

Reagent bottles (abst.), - - - - - 7, 173, 209

Reagents, concentration of (abst.), 12, 175: dilution of, by formula, 19, 587: sensitive to light, bottles for (abst.), - - - - - 7, 209

Red lead, variations in the composition of, - - - - - 19, 339

Reducing agents, metallic, contributions to our knowledge of, - - 16, 833

Reducing properties of living cells (abst.), - - - - - 4, 176

Reduction of ferric alum by sugar, speed of, 19, 683: of metallic oxides at high temperatures, - - - - - 20, 232

Refraction and heat of combustion (abst.), - - - - - 4, 176

Refraction, molecular, of terpenes (abst.), - - - - - 4, 173

Refractometer, as a means of testing butter (abst.), - - - - - 9, 14

Regulator, automatic, for evaporation and distillation (abst.), 1, 584: for gas pressure, - - - - - 20, 501

Reinsch's test for arsenic and antimony, - - - - - 18, 953

Rennet, active principle of, - - - - - 10, 98

Research, relation of, to teaching, - - - - - 15, 665

Researches on explosives, observations on Noble and Abel's (abst.), 1, 401

Resin, action of alcoholic potassium hydroxide on (abst.), 8, 206: estimation of, in soaps (abst.), 8, 62: fir, delicate reaction for (abst.), 10, 195: from rose-wood (abst.), - - - - - 2, 431

Resin oil, capronic acid occurring in (abst.), 4, 228: spirit, constituents of (abst.), - - - - - 4, 200

Resins and gums, chemical examination of (abst.), - - - - - 10, 157

Resins, new method of analyzing, 16, 275: studies upon - - - - - 12, 285, 392

Resistance of electrolytes, method for determining - - - - - 20, 206

Resorcinol, action of acetaldehyde on (abst.), 9, 34: heat of solution of, 18, 152, 154: nitro derivatives of (abst.), 5, 129: and thymol, reactions of (abst.), - - - - - 12, 502

Resorcinol, diethoxy-, action of nitrous acid on (abst.), - - - - - 1, 161

Resorcinol dye-stuffs (abst.), - - - - - 4, 268

Resorcinoldiethyl ether, action of nitrous acid on (abst.), - - - - - 1, 161

Respiration, chemical phenomena of, in a super-oxygenated atmosphere (abst.), 6, 129: of plants, chemical phenomena of (abst.), 6, 232

Respiration calorimeter, description of a, - - - - - 20, 681

Retene, constitution of (abst.), - - - - - 7, 227

Reversion of phosphates and phosphoric acid. See Phosphates and Phosphoric acid.

Rhabdophane, analysis of (abst.), - - - - - 4, 203

Rhamnose, fucose, an isomer of (abst.), - - - - - 12, 476

Rhode Island Section, meetings of, 17, (28), (32), (46), (62), (65); 18, (33), (64), (68), (99), (120), (125); 19, (20), (22), (42), (50); 20, (4), (25), (33), (83).

Rhodium, color reaction of (abst.), 8, 58: constitution of some double salts of (abst.), 12, 472: three new compounds of (abst.), - - - - - 7, 283

Rider, apparatus for moving (abst.), - - - - - 1, 586

Riders, safety attachment for, - - - - - 16, 764

Roccelin (sodium oxyazonaphthalenesulphonate), - - - - - 1, 180

Rock analysis, plea for completeness in, - - - - - 16, 90

Rock salt, association of hydrocarbons with, in nature (abst.), 10, 75: from Saltville, Va., analysis of, - - - - - 4, 255

Root tubercles in water culture, - - - - - 20, 9

Rosaniline, constitution of, note upon (abst.), 1, 271: examination of wines for compounds of (abst.), 8, 57: formation of a blue dye-stuff from (abst.), 6, 287: salts of, constitution of (abst.), - - 2, 366, 431

Rosanilines, homologous and isomeric (abst.), 4, 237: probable number of homologous and isomeric (abst.), - - - - - 6, 191

Rosin, determination of, in fats (abst.), 4, 192: determination of, in soaps and fats (abst.), 8, 205: the iodine figure of, - - - - - 16, 56

Rosin oil, detection of, in lard (abst.), 4, 192: separation of, from mineral oil, - - - - - 16, 385

Rosolene (abst.), - - - - - 8, 56

Rotation, determination of, of levorotatory solutions, 5, 104: of plane of polarization, relations between amounts of (abst.), - - - - - 4, 173

Rotary polarization under magnetic influence (abst.), - - - - 4, 257
 Rotary power, molecular, synthesis of compounds possessing (abst.), 6, 74
 Rouge Français (abst.), - - - - 2, 226
 Rubber, vulcanized, analysis of (abst.), - - - - 7, 178
 Rubber goods, estimation of mineral matter in, - - - - 19, 952
 Rubidium, atomic weight of (abst.), - - - - 1, 106
 Rubidium bromoselenate, 20, 570: columbium fluoride, 18, 58: fluoride, 18, 57: ruthenium nitrosochloride, 16, 395: tantalum fluoride, 18, 58: trinitride, - - - - 20, 227
 Rubijervine, chemistry of (abst.), - - - - 1, 554
 Russian Chemical Society, report of papers of (abst.), - - - - 6, 77, 95, 128, 135, 157, 167
 Ruthenium, electrolytic determination of, 17, 652: and its nitrosochlorides, - - - - 16, 388
 Ruthenocyanides, contributions to the knowledge of, 18, 981: some new, - - - - 20, 29
 Rye kernel, the proteids of, - - - - 17, 429
 Sabadilla, alkaloids of, - - - - 14, 226
 Saccharate, antimonyl potassium (abst.), - - - - 6, 35
 Saccharic acid and mucic acid, derivatives of (abst.), - - - - 10, 17
 Saccharimeter, new (abst.), 1, 92: for sugar analysis, - - - - 16, 677
 Saccharimetric tests, table for correction of, - - - - 3, 89
 Saccharin, on (abst.), 5, 20; 9, 34; 9, 217: detection of (abst.), 9, 201; 10, 88
 Saffranine, formation of substituted (abst.), 10, 22: new mode of formation of (abst.), 10, 22: spectra of salts of (abst.), - - - - 1, 374
 Salicylic acid, amount of, in the cultivated pansy (abst.), 6, 233: anti-septic properties of (abst.), 4, 238: colorimetric estimation of (abst.), 4, 189; 9, 15: curve of solubility of (abst.), 1, 272; detection of, 1, 294, 578; 8, 278; 9, 15; 16, 198: determination of (abst.), 5, 118: reaction for iron, delicacy of (abst.), 1, 335: solubility of (abst.), - - - - 1, 272; 2, 88
 Salicylic acid, *m*-chlor-, products of nitration of (abst.), 1, 288; 2, 94: *p*-hydroxy- (2:5-dihydroxybenzoic acid) (abst.), - - - - 1, 495
 Salicylic acids, iodo-, and dihydroxybenzoic acids (abst.), 5, 29, 59: nitro-, and isomerisms of benzene derivatives (abst.), - - - - 1, 233
 Saliva, action of, on starch and glycogen (abst.), 1, 173, 273: pathological and poisonous substances detected in (abst.), - - - - 1, 402
 Salol, study of (abst.), - - - - 9, 197
 Salt industry of the Tees (abst.), - - - - 10, 159
 Salt solutions, decomposition of, by animal charcoal (abst.), 1, 95: electrical conductivity of dilute (abst.), 6, 125: molecular volume of (abst.), - - - - 6, 48
 Salts, boiling points of solutions of (abst.), 9, 109: combination of water with (abst.), 8, 179: decomposition of, by water (abst.), 7, 140: double, crystallization of (abst.), 4, 261: double decomposition of (abst.), 6, 128: double, prepared by fusion (abst.), 4, 239: heat of hydration of (abst.), 6, 189: hydrated, relations of volumes of so-

lutions to water of composition (abst.), 1, 392: isomorphous, and fractional crystallization, 6, 408: metallic, reactions of dipropylamine with (abst.), 8, 201: solubility of some, in fused sodium nitrate (abst.), 7, 53: solubility of, in water (abst.), 7, 27: volatility of certain inorganic, - - - - - 19, 155
 Samarium and its compounds (abst.), 5, 234: researches upon (abst.), 1, 401
 Samarskite, study of earth-metals contained in (abst.), - - - - - 4, 222
 Sampling bar copper, rational mode of, 19, 243: by quartation, experiments on, - - - - - 15, 260
 Sampling and analyzing commercial products, standard methods of (abst.), 6, 200: and testing, international methods of (abst.), - - - - - 6, 32
Sam-shu, a Chinese liquor, analysis of, - - - - - 7, 243
 Sandal-wood, the coloring matter of (abst.), - - - - - 1, 158
 Saponification, velocity of (abst.), - - - - - 8, 83
 Sausages, determination of starch in (abst.), - - - - - 1, 571
 Scale prevention, treatment of boiler water for, - - - - - 15, 610
 Scale-pans of mica, - - - - - P. 1, 126
 Scandium, occurrence of (abst.), - - - - - 1, 389
 Scapolites, presence of chlorine in (abst.), - - - - - 1, 391
 Schistose structure in compressed bodies (abst.), - - - - - 6, 38
 Schulze-Tiemann method for determining nitric acid (abst.), - - - - - 12, 353
 Science in America (presidential address), - - - - - P. 1, 135
 Sea weed, fucose from, an isomer of rhamnose (abst.), - - - - - 12, 476
 Sealed tubes, apparatus for heating, - - - - - 13, 182
 Sebacic acid, amidobenzoic derivatives of (abst.), 7, 202: bromine substitution products of (abst.), 4, 204: oxidation of (abst.), 8, 28, 56, 87
 Sebacic and suberic acids, formation of, from crude fatty acids (abst.), 4, 233
 Selenates, crystallized (abst.), - - - - - 10, 76
 Selenium, derivatives of, 20, 555: determination of atomic weight of 20, 555: and tellurium, notes on, 19, 771: and tellurium, separation of, and preparation of, from lead chamber deposit (abst.), 6, 47
 Selenium dioxide, pure, preparation of, 20, 559: double bromides, 20, 568: halogen compounds of (abst.), 6, 76: monoxide, 20, 577: tetrachloride, combination of auric chloride with (abst.), - - - - - 8, 20
 Selenocyanates, alkaline, action of non-metals on (abst.), - - - - - 8, 179
 Selenocyanogen and sulphocyanogen compounds (abst.), - - - - - 12, 231
 Serpentine of Venayes (Vallée d'Aoste) analysis of (abst.), - - - - - 1, 275
 Sewage disposal at Worcester, Mass., 16, 682: purification, recent work in England on, 20, 185: sludge, disposal of (abst.), - - - - - 6, 103
 Silica, determination of, in blast furnace slag, 16, 501; 19, 370: ultramarine blue from (abst.), - - - - - 7, 172
 Silica and alumina in pure wheat, relation between amounts of (abst.), 1, 110: and silicates, action of hydrofluoric acid on, - - - - - 8, 210
 Silicates, decomposition of, by means of litharge (abst.), 1, 334: determination of ferrous oxide in (abst.), 1, 85: determination of potassium and sodium in (abst.), 1, 536; 6, 312: fractional analysis of, 13, 277: fusibility of, 12, 200, 307: insoluble, analysis of, 12, 134:

natural, alkaline reaction of, - - - - - 20, 739

Silicic acid, separation of, from tungstic acid, note on, - - - - - 19, 377

Silicic acid, ortho-, existence of, - - - - - 19, 832

Silicides of iron, - - - - - 17, 923

Silico-molybdcic acid (abst.), - - - - - 4, 77

Silicon (abst.), 4, 240: action of carbon disulphide on (abst.), 4, 240: and carbon, new compounds of (abst.), 4, 237: carbide, 15, 411: determination of, in aluminum, 18, 768: determination of, in blast furnace slag, 19, 370: determination of, in iron and steel (abst.), 1, 104, 285, 371, 562; 4, 165: determination of, in pig-iron and steel, 19, 105: influence of, upon heat of solution of cast irons, 20, 690: influence of, on the properties of iron and steel (abst.), 10, 159: rapid method for determination of (in iron-manganese alloys), 19, 138: in steel, note on Drown's method of determining, - - - - - 20, 547

Silicon tetrachloride, derivatives of, - - - - - 20, 13

Silk, raw, influence of composition of water in production of (abst.), 1, 159

Silk, cotton and wool, absorption of weak reagents by (abst.), - - - - - 5, 98

Silver, alloys of, with aluminum, 16, 485: ammoniacal alkaline solution of, as a reagent for aldehyde (abst.), 5, 50: atomic weight of, 19, 361; 20, 164: atomic weight of, electrolytic determination of, 18, 990: detection of, in metallic lead (abst.), 4, 168: determination of, in alloys (abst.), 1, 99: determination of, in copper, actual accuracy of, 18, 816: determination of, in galena (abst.), 1, 562: determination of, in lead, cause of discrepancies in, P. 1, 67: determination of, Volhard's method for (abst.), 1, 535: electrolysis of pyrophosphate of (abst.), 12, 171: flame reactions of, P. 1, 2, 33: a form of, obtained by reduction of silver sulphide, 16, 700: metallic, presence of oxygen in (abst.), 1, 527: method of toughening, in the melting crucible, 6, 182, 210: oxidation of, 18, 254: (abst.), 9, 169: separation of, from arsenic by hydrobromic acid gas, 20, 806: separation of, from arsenic by means of hydrochloric acid gas, 18, 1039: separation of, from cadmium, 16, 424: separation of, from copper, 16, 420: separation of, from lead (electrolytic), - - - - - 15, 102

Silver ammonium compounds, history of (abst.), 6, 73: ammonium oxide in solution, 2, 32: bromide, sensitiveness of, to light (abst.), 6, 128: chloride, bromide, and iodide, blow-pipe experiments upon, P. 2, 74: cyanide, action of sulphur chloride on (abst.), 7, 201: cyanide, identification of minute quantities of (abst.), 5, 245: haloid salts, behavior of, towards bromine and iodine (abst.), 5, 245: iodide as a blow-pipe reagent, 7, 132: fulminate, decomposition of, by hydrochloric acid (abst.), 6, 90: fulminate, Liebig's production of, without nitric acid (abst.), 6, 46: nitrate, combination of, with the alkaline nitrates (abst.), 8, 50: nitrate, action of sulphur oxychlorides on (abst.), 4, 223: nitrate, action of thiophosphoryl chloride on (abst.), 4, 224: nitrate, alcoholic, a reagent for acetyl-

ene hydrocarbons (abst.), 10, 87: and potassium, haloid salts of (abst.), 4, 235: salts of fatty acids, products of dry distillation of (abst.), 8, 64: salts, action of molybdenum dioxide upon, 16, 569: selenite, preparation of, 20, 560: sulphide, refining of, 18, 643: ultramarine, some reactions of (abst.), - - - - - 1, 163

Silver assay, commercial, accuracy of, 16, 505: loss of silver in, 16, 313: modified method of, - - - - - 19, 814

Silver ores, reduction of, by hydrogen, in the wet way (abst.), 4, 241: voltameter, use of Gooch crucible as, - - - - - 12, 300

Sinapic acid (abst.), - - - - - 6, 167

Siphon, automatic filtering, - - - - - 19, 817

Skatole, constitution of (abst.), 2, 368: empirical formula of (abst.), 2, 137

Slag, determination of silicon in, 19, 370: from ignited garbage, analysis of, 6, 188: Thomas, adulteration of (abst.), - - - - - 12, 413

Slags, basic phosphatic, mechanical analysis of, 19, 19: blast furnace, and the fusibility of silicates, 12, 189, 307: blast furnace, calculation of, 12, 443: Thomas (abst.), 9, 118: Thomas, method for determining phosphoric acid in (abst.), - - - - - 9, 119

Slate, composition of (abst.), - - - - - 2, 131

Smelting furnace of the United States mint, - - - - - 7, 159

Smokeless powder, the development of (review), - - - - - 18, 819

Snow water, examination of, - - - - - 6, 187

Soap analysis, 5, 44: (abst.), - - - - - 7, 179

Soap, dissociation of, by water, 12, 48: new antiseptic (abst.), 10, 92: powdered, examination of (abst.), 8, 233: preparation of (abst.), 8, 206: preparation of, from suint and fuller's grease (abst.), 8, 87: solutions of, action of sodium chloride on (abst.), - - - - - 8, 104

Soaps (abst.), 8, 43: estimation of glycerol in (abst.), 10, 182: estimation of resin in (abst.), 8, 62: preparation of soluble magnesia (abst.), 8, 64: and fats, determination of rosin in (abst.), - - - - - 8, 205

Soap bubbles, opaque, for gas experiments, - - - - - 12, 49

Soda industry (abst.), - - - - - 6, 174

Soda, loss of, by formation of Gay-Lussite (abst.), 4, 74: process, ammonia, influence of, on the value of hydrochloric acid and chlorine (abst.), 6, 174: new processes for producing, study of reactions for (abst.), - - - - - 4, 75

Soda industries in United States, - - - - - 15, 565

Soda liquors, Gay-Lussite in, 4, 73: vanadium compounds from (abst.), 4, 73

Soda lyes, oxidation of (abst.), - - - - - 4, 73

Sodium, action of, on lupinin (abst.), 5, 17: compounds, determination of, in potassium carbonate (abst.), 4, 165: determination of, in aluminum, 18, 770: note on the spectrum of (abst.), 1, 373: and potassium, determination of, in silicates (abst.), 1, 536: vapor density of, experiments on (abst.), - - - - - 2, 371

Sodium acetate, estimation of, in a complex organic mixture, 16, 157: acid carbonate, preparation of (abst.), 6, 173: acid sulphate, decomposition of phosphates by, 7, 238; 8, 32: acid sulphite, thermo-

chemical investigation of (abst.), 6, 189: bromate, use of, in volumetric analysis (abst.), 7, 296: bromoselenate, 20, 570: carbonate, action of, on feldspars, etc. (abst.), 4, 199: carbonate, precipitation of alums by (abst.), 4, 258: chloride, action of, on solutions of soap (abst.), 8, 104: chloride, coloration of coal fire by (abst.), 10, 179: chloride, fibrous, P. 2, 141: chloride solutions, specific gravity of, 20, 621: ferrate, production of, 17, 763: fluorides (abst.), 6, 74: fluoride, volatility of, 16, 418: fulminate (abst.), 7, 201: glycerolate (abst.), 8, 184: hydroxide, action of, in expelling ammonia from salts and amines (abst.), 6, 27: hydroxide, action of, on feldspars, etc. (abst.), 4, 199: hydroxide, the Le Sueur process for production of, 20, 868: hydroxide, oxidation of sulphur compounds occurring in the manufacture of (abst.), 6, 28: hydroxide, preparation of standard solution of, 1, 525: nitrate, decomposition of, by sulphuric acid, 13, 246: nitrate, formation of deposits of (abst.), 8, 70: nitrate, fused, solubility of certain salts in (abst.), 7, 53: nitrite, qualitative separations with, 19, 434: nitroprusside, preparation of, 19, 23: palladium bromide, 16, 467: peroxide as an iron group reagent in qualitative analysis, 19, 341: peroxide in quantitative analysis, 20, 130: phosphate, detection of, in glacial phosphoric acid (abst.), 10, 66: potassium double carbonate (abst.), 10, 77: potassium racemates (abst.), 8, 37: racemates (abst.), 8, 37: salts, volatility of, 19, 156: sulphate, anhydrous, heat evolved on mixing of, with water (abst.), 1, 395: sulphate, modifications of (abst.), 7, 28: sulphite and acid sulphite, thermochemical investigation of (abst.), 6, 189: trinitride, 20, 226: vanadate, action of hydrochloric acid gas upon, - - - - - 16, 578

Sodium flame, lamp for, - - - - - 15, 121

Sodium glyoxal acid sulphite, thermochemical examination of (abst.), - - - - - 6, 189

Soil, analysis of, changes in official methods of, 16, 792: effects of salts and fertilizers on moisture of, 19, 620: rich in organic matter, germination in (abst.), 7, 25: vegetable, nitrogenous principles of (abst.), - - - - - 9, 104

Soils, acidity in, relative sensibility of plants to, 20, 103: action of organic and mineral acids upon, 17, 148: analysis of (abst.), 6, 168: apparatus for determination of water-holding power of, 17, 769: argillaceous, fixation of atmospheric nitrogen by (abst.), 8, 18: chemical and physical investigation of, 16, 34: determination of ammoniacal nitrogen in (abst.), 6, 169: determination of nitric acid in (abst.), 4, 258: determination of phosphoric acid in (abst.), 6, 194: determination, dissemination, etc., of phosphoric acid in (abst.), 6, 137: emission of ammonia by (abst.), 10, 12: fixation of atmospheric nitrogen by (abst.), 10, 12: in northern France, phosphoric acid in (abst.), 4, 77: reduction of nitrates in (abst.), 5, 117

Solanine and its decomposition products (abst.), - - - - - 1, 255

Solder for aluminum, - - - - - 16, 881

Solid state, numerical laws of (abst.), - - - - - 6, 73
 Solidification (abst.), - - - - - 7, 244
 Solubility of chlorides in presence of hydrochloric acid (abst.), 8, 163:
 effect in case of tri-ionic salts, investigation of the theory of, 20,
 194: of salts in water (abst.), 7, 27: of salts of weak acids in
 stronger acids, 20, 742: of weak acids in solutions of salts of other
 acids, - - - - - 20, 751
 Solubilities, apparatus for determining, 16, 715: improved apparatus
 for determination of (abst.), - - - - - 1, 375
 Solution, apparatus for effecting, 19, 286: connection between pseudo
 and true (abst.), 6, 286: of solid substances in their own solutions,
 rate of, - - - - - 19, 930
 Solutions, boiling-points of (abst.), 9, 109: constitution of (abst.), 12,
 351: formulae for mixing (abst.), 6, 43: salt, volume alterations
 attending the mixture of (abst.), - - - - - 5, 97
 Solvay process, improvement in (abst.), 4, 74: for production of potas-
 sium carbonate (abst.), - - - - - 4, 74
 Sorbic and hydroscopic acids, structural formula of (abst.), - - - - - 2, 173
 Sorbus tree, tannic acid contained in the berry of (abst.), - - - - - 9, 101
 Sorghum, Minnesota, examination of, - - - - - 1, 44
 Sorghum cane, analysis of, 3, 151: juice, predominant organic acid
 in, - - - - - 15, 144
 Sorghums, development of sugar in, - - - - - 2, 75
 Soxhlet's extractor, modified form of, - - - - - 9, 182
 Soy bean, proteids of the, - - - - - 20, 419
 Spattering, loss by, device to prevent, - - - - - 20, 233
 Specific gravity bottle. See Pyknometer.
 Specific gravity of fat at 100°, etc. (abst.), 10, 157: of liquids, deter-
 mination of (abst.), 2, 171: of powdered bodies, determination of
 (abst.), 1, 395: tables, collection of (abst.), - - - - - 10, 159
 Specific volumes, etc., of esters of fatty acids (abst.), - - - - - 8, 228
 Specimen bottle, - - - - - 18, 412
 Spectra, absorption, of the alkaloids (abst.), 6, 309: absorption, of car-
 bon compounds, relation of, to molecular structure (abst.), 4, 144:
 of azo colors, 6, 117, 149: of gases, influence of pressure and tem-
 perature on (abst.), 1, 93: homologous (abst.), 5, 236: regulator
 for projection of, by electric light (abst.), 7, 141: of solutions, dis-
 charger for, 20, 1: ultra-violet, photographs of (abst.), - - - - - 4, 169
 Spectral analysis, quantitative (abst.), - - - - - 1, 84
 Spectrophotometer, new form of (abst.), - - - - - 1, 583
 Spectroscope, support for (abst.), 1, 379, 397: Thollon's, note on
 (abst.), - - - - - 1, 172
 Spectroscopes, new compound prism for (abst.), - - - - - 1, 172
 Spectroscopic examination of Lauth's violet and methylene blue, 6,
 304: of pure indigo (abst.), 6, 97: of vapors obtained on heating
 iron and other metals (abst.), - - - - - 6, 232
 Spectrum, absorption, of bromine and iodine monochloride (abst.), 1,

95: absorption, of different liquids (abst.), 1, 94: of beryllium (abst.), - - - - - 5, 115
 Spectrum analysis, quantitative, contributions to (abst.), - - - - 1, 374
 Spectrum photography in relation to quantitative analysis (abst.), 6, 243
 Speed of dissociation of brass (abst.), - - - - - 6, 75
 Spelling and pronunciation of chemical terms, - - - - - 14, 63
 Spermatic fluid, detection of (abst.), - - - - - 1, 557
 Spices, determination of purity of (abst.), 1, 570: examination of (abst.), - - - - - 10, 70
 Spiegel. See Iron.
 Spinel, artificial production of (abst.), - - - - - 9, 168
 Stachyose, saccharide from *Stachys tuberifera* (abst.), - - - - - 12, 352
 Stand, new laboratory, - - - - - 13, 102
 Standard solutions, dropping flask for, - - - - - 16, 156
 Stannic chloride, action of, on acetic acid and acetic anhydride (abst.), 2, 363: chloride, action of water on (abst.), 12, 71: oxide, separation of, from tungstic acid (abst.), - - - - - 9, 200
 Stannous chloride, action of iodine on, 19, 515: chloride, speed of reduction of ferric chloride by, 16, 314: iodide, solubility of, in water and in hydriodic acid, 19, 845: oxide, action of acid solutions on (abst.), 4, 234: oxide, action of alkaline solution on (abst.), 4, 235: salts, titration of, with iodine, - - - - - 19, 809
 Starch, action of diastase, saliva, and pancreatic juice on (abst.), 1, 173, 273: action of diastase and sulphuric acid on (abst.), 1, 101: determination of water in (abst.), 6, 137: equivalent to copper, Wein's table of, recalculation of, 19, 452: hydrolysis of, by acids, 19, 261, 679: hydrolysis of, by acids, investigation of, 18, 869: processes used in manufacture of, 17, 68: table of analyses of commercial, 14, 316: transformation of, into glucose by cold water (abst.), - - - - - 1, 271
 Starch, determination of (abst.), 6, 44: quick, 17, 64: with ammoniacal copper solution (abst.), 1, 547: comparison of methods for, 16, 726; 20, 253: in food-stuffs, 19, 192: and formula of (abst.), 1, 546: method for (abst.), 9, 36, 46: in the potato (abst.), 10, 87: in sausages (abst.), 1, 571: in wheat, - - - - - 19, 302
 Starch iodide (abst.), - - - - - 10, 188
 Starch products, estimation of carbohydrates in, - - - - - 19, 698
 Starch sugar, detection of, in cane sugar, 2, 111, 428: syrup, detection of, in sugar-house molasses, - - - - - 3, 87
 Stas memorial, - - - - - 18, 201
 Stassfurt industry, progress of (abst.), - - - - - 4, 75; 6, 24
 Staurotide, analysis of (abst.), - - - - - 7, 294
 Steam, fractional distillation in a current of (abst.), - - - - - 7, 33, 251
 Stearic acid, determination of, in fats, 19, 32: separation of, from oleic acid (abst.), - - - - - 1, 360
 Stearin, beef, test for, in lard (abst.), - - - - - 10, 182
 Steel, on the condition in which carbon exists in (abst.), 5, 114: effects

of compression on hardness of (abst.), 4, 235: gases enclosed in (abst.), 1, 165: gases occluded in (abst.), 6, 172: influence of heat treatment and carbon upon the solubility of phosphorus in, 19, 786: influence of silicon on the properties of (abst.), 10, 159: relation between chemical composition and mechanical properties of (abst.), 1, 278: separation of carbon from, new mixture for (abst.), 10, 156

Steel, determination in, of carbon, 15, 283; 18, 223: (abst.), 4, 165: of carbon, by combustion in the wet way, 20, 243: of nickel, 16, 110: of nitrogen (abst.), 1, 562: of phosphorus, 18, 955; 19, 792: of phosphorus, notes on, 20, 429: of phosphorus, modification of molybdate method for (abst.), 7, 294: of silicon (abst.), 4, 165: of silicon, notes on Drown's method for, 20, 547: of sulphur, two methods for (abst.), 10, 84

Steel and iron, present possibilities in the analysis of (presidential address), 19, 93

Steel and iron, standard methods for analysis of, 15, 501: thermo-chemical study of, 19, 754; 20, 78: work of committees on international standards for analysis of, 15, 448

Steel and iron, determination in, of carbon, 15, 213, 450, 526: (abst.), 12, 352: of carbon, colorimetric (abst.), 1, 371: of carbon, gas-volumetric (abst.), 10, 68: of combined carbon, P. 2, 72: of chromium (abst.), 10, 66: of phosphorus (abst.), 1, 104; 9, 8: of silicon (abst.), 1, 104, 285, 371, 562: of sulphur (abst.), 1, 560

Stereochemical considerations (abst.), 12, 155

Stereochemistry of creatinines, note on, 14, 284: index to literature of, 14, 241: of molecules containing nitrogen (abst.), 12, 166

Sterilization, alleged, of river water by mine water, 12, 12

Sterilized solutions, apparatus for measuring (abst.), 9, 123

Stilbene, a new formation of (abst.), 2, 42

Still, a convenient, 17, 917: and water-oven, a new form of, 17, 122

Stop-cocks, glass, lubricants for, 20, 678

Stove, electrical laboratory 19, 790

Strontium, atomic weight of, 17, 203: and barium, estimation of, in silicate analysis, 16, 83: and barium, occurrence of, in silicate rocks, 16, 81: separation of, from barium (abst.), 12, 118, 410

Strontium chloride, volatility of, 19, 156: hydroxide, preparation of (abst.), 7, 65: palladium bromide, 16, 467: ruthenocyanide, 20, 29: sulphate, crystallized, see Celestine; sulphate, reproduction of, by wet process (abst.), 10, 113: titanate (abst.), 8, 178: trinitride, 20, 228

Structure, molecular, of carbon compounds, relation to absorption spectra (abst.), 4, 144

Strychnine (abst.), 6, 92: and brucine, physiological action of (abst.), 7, 116: detection of, in an exhumed body, 16, 108: experiments on (abst.), 7, 116: and morphine, separation of, from fatty matters (abst.), 9, 15: note on the test for, 16, 824: post-mortem detection of, 16, 720: reaction for (abst.), 1, 341: reaction of, with iodic acid

(abst.), 1, 545: researches upon (abst.), - - - - - 1, 273
 Strychnine, bromo-, crystallography of (abst.), - - - - - 7, 117
 Styphnic acid, constitution of (abst.), - - - - - 6, 287
 Styrolene, rotary power of (abst.), - - - - - 1, 279
 Styrolene bromide, transformation of, into methyl benzoate (abst.), 2, 92
 Suberic acid, bromine substitution products of (abst.), 4, 204: and
 sebacic acids, formation of, from crude fatty acids (abst.), 4, 233
 Substitution depending on atomic magnitude of reacting bodies
 (abst.), 12, 167: law of, in naphthalene series (abst.), - - - - - 4, 206
 Succinic acid, amidobenzoic acid derivatives of (abst.), 7, 202: prepara-
 tion of, from tartaric acid (abst.), - - - - - 4, 205
 Succinic acid, α -methylhydroxy-, production of (abst.), 2, 342: propyl-
 and iso-propyl- (abst.), 4, 270: tetramethyl- (abst.), - - - - - 12, 157
 Succinic acid series, formation of anhydrides in (abst.), - - - - - 12, 157
 iso-Succinic acid, condensation products of, with benzaldehyde
 (abst.), - - - - - 5, 237
 Succinic anhydrides, decomposition of mono-substituted (abst.), 5, 18:
 fermentation (abst.) - - - - - 1, 273
 Succinimide, 16, 433: heat of solution of, in water and in alcohol, - - 18, 156
 Succinyl compounds of toluidine (abst.), - - - - - 1, 160, 397
 Sucrose, action of acetic and hydrochloric acids on, 17, 320: determina-
 tion of, in presence of glucose, - - - - - 17, 312
 Sugar, absorption of, by bone black, 1, 509: action of bone black on
 solutions of, 1, 468: action of nitric acid on, 9, 45: analysis of,
 gravimeter for, 16, 677: analysis of, singular process of, 7, 42:
 beet, reducing substances in raw (abst.), 10, 38: commercial
 valuation of, 1, 514: in corn-stalks and melons, 1, 420: crystallizable,
 determination of, in the beet, 16, 266: determination of,
 with ammoniacal copper solution (abst.), 1, 109, 547: deter-
 mination of, by means of polariscope, 1, 2: determination of,
 volumetric (abst.), 1, 109: development of, in sorghums, 2, 75:
 inversion of, by salts, 18, 120, 693: inverted, influence of tem-
 perature on polarization of, 1, 26: inverted, sweetness of (abst.),
 1, 182: neutral and inverted (abst.), 1, 488: neutral, or inactive
 glucose (abst.), 2, 364: neutral (inactose) (abst.), 10, 16: of milk,
 partial synthesis of (abst.), 1, 89: new process for rapid estimation
 of, etc., 1, 205: palm, analysis of (abst.), 1, 488: pine tree, 13, 228:
 raw, and cane juice, occurrence of aconitic acid in, P. 1, 220: re-
 ducing action of different kinds of, on alkaline copper solutions
 (abst.), 1, 342: reducing, determination of, in terms of cupric ox-
 ide, 18, 749: in *Symporicarpus racemosa* (abst.), 7, 208: test
 limits for detection of metals in, - - - - - 2, 337
 Sugar beet, on the (abst.), - - - - - 5, 118, 119, 119
 Sugar beets, experiments with, - - - - - P. 2, 56
 Sugar group, synthetical experiments in (abst.), 9, 191: syntheses in,
 - - - - - 12, 340, 400, 461

Sugar-cane, amide of, additional notes on, 20, 133: amines in juice of, 18, 743: effect of clarification of juice of, 19, 56: experiments with fertilizers upon, 1, 416: estimation of juice extracted from, 17, 920: the lecithins of, 20, 113: in Louisiana, experiments with, P. 2, 52: principal amide of, - - - - - 19, 881

Sugars, beet, vanillin in certain unrefined (abst.), 2, 368: cane and invert, action of light and heat on (abst.), 5, 232: in condensed milk, estimation of, 15, 668: contributions to the knowledge of certain kinds of (abst.), 1, 162: determination of, by copper potassium carbonate solution (abst.), 12, 226: different kinds of, method for determination of (abst.), 9, 36: in food-stuffs, estimation of, 19, 190: of hesperidine and isohesperidine (abst.), 10, 79: reactions of, with oxalic anhydride (abst.), 1, 100: recent work on, 16, 549, 670: reduction of cupric salts by (abst.), 10, 189: and solid hydrocarbons, heat of combustion of (abst.), 9, 112: and syrups, incineration of, without sulphuric acid (abst.), - - - 12, 18

Suint, composition of (abst.), 8, 185: and fuller's grease, preparation of soap from (abst.), 8, 87: volatile acids of (abst.), - - - 9, 173

Suint waters, transformations produced in (abst.), - - - - - 8, 203

Sulphamine-*m*-toluic acid, oxidation of (abst.), - - - - - 2, 369

o-Sulphaminebenzoic acid. See Saccharin.

Sulphanilic acid (abst.), - - - - - 2, 291

Sulphates, action of heat on, 5, 178: researches upon (abst.), 1, 278: volumetric determination of (abst.), - - - - - 12, 72

Sulphides, action of heat on, 5, 178: of alcoholic radicals, action of chlorine on (abst.), 10, 16: alkaline, action of nitrates on (abst.), 6, 142: conversion of, into sulphates by means of nitric and hydrobromic acids (abst.), 6, 33: determination of, in presence of sulphite and thiosulphate in solution (abst.), 4, 160: metallic, action of acid vapors on, 18, 1096: metallic, action of ammonium salts upon (abst.), 1, 331, 388: of phosphorus (abst.), 6, 189: produced by compression of their elements (abst.), 6, 190: use of bromine for decomposing (abst.), - - - - - 9, 35

Sulphines, researches on (abst.) - - - - - 10, 82

Sulphinide, new term proposed (abst.), - - - - - 2, 222

Sulphites, action of heat on, 5, 193: determination of (abst.), 1, 89: determination of, in presence of sulphides and thiosulphates (abst.), 4, 160: qualitative test for, in the presence of thiosulphates and sulphates (abst.), - - - - - 9, 117

Sulpho group, expulsion of, by bromine (abst.), - - - - - 4, 175

o-Sulphobenzoic acid (abst.), - - - - - 2, 222

Sulphobenzoic acid, nitro- (abst.), - - - - - 2, 44

Sulphocarbanilide, bodies produced by action of alkyl iodides on (abst.), - - - - - 4, 230

Sulphocarbonates, priority in methods of preparing (abst.), - - - 6, 37

Sulphocyanacetone (abst.), - - - - - 5, 122

Sulphocyanates, heat of formation of some (abst.), - - - - - 4, 234

Sulphocyanic acid, heat of formation of (abst.), - - - - - 4, 234
 Sulphocyanogen and selenocyanogen compounds (abst.), - - - - - 12, 231
 Sulphocyanopropimine (abst.), - - - - - 5, 122
 Sulphones, formation of, from alkylsulphonated fatty acids (abst.), 7, 203
 Sulphonic acids, aromatic, action of fused alkalies upon (abst.), 2,
 294: formation of, from sulphones (abst.), - - - - - 1, 293, 393
 Sulphonic compounds, action of chlorine on (abst.), - - - - - 4, 263
 Sulphur, burning of, with white phosphorescent flame (abst.), 5, 65:
 in casein, amount of (abst.), 8, 60: color of vapor of, 20, 757: new
 combination of carbon and bromine with (abst.), 4, 226: com-
 pounds of, occurring in the manufacture of caustic soda, oxida-
 tion of (abst.), 6, 28: influence of, on Eggertz' test for carbon in
 iron (abst.), 10, 115; organic compounds containing, action of
 chlorine on (abst.), 6, 133: new oxyacid of (abst.), 10, 76: oxy-
 gen, and halogens, combined with hydrogen, reciprocal displace-
 ments of (abst.), 1, 385: recovery of (abst.), 2, 289: recovery of
 from alkali waste (abst.), 10, 90: relative activity of the haloid
 derivatives of (abst.), 8, 164: solubility of, in acetic acid (abst.),
 1, 99: sublimation of (abst.), 8, 20: and zinc dust, experiments
 with (abst.), - - - - - 5, 53
 Sulphur chloride, action of, on oils (abst.), 10, 116: chloride, action of,
 on minerals, 20, 289: chloride, action of, on silver cyanide (abst.),
 7, 201: dioxide, action of, on nitric oxide (abst.), 4, 72: dioxide,
 apparatus for preparing (abst.), 9, 175: dioxide, some reactions of
 (abst.), 7, 286: new oxychloride of (abst.), 4, 231: oxychloride,
 action of, on alcohols (abst.), 2, 136: oxychloride, vapor density of
 one (abst.), 4, 78: oxychlorides (abst.), 2, 61: oxychlorides,
 action of, on silver nitrate (abst.), 4, 223: salts derived from phos-
 phorus trisulphide (abst.), 6, 76: tetrachloride, combination of
 auric chloride with (abst.), - - - - - 8, 20
 Sulphur, determination of, in asphalt, 20, 882: in calcium carbide, 18,
 740: in coal, P. 1, 97: in coal, methods for, 20, 630: in coke, 10,
 155: in copper, native, 6, 241: in copper, refined, 17, 814: in iron,
 19, 114: in iron, standard solution of iodine for, 16, 112: in cast
 iron, 18, 1079: in cast iron, white, as hydrogen sulphide, 17, 891:
 in pig iron, Drown's method for, 18, 406: in iron and steel, new
 apparatus for, 19, 581: in pig iron and steel, 19, 106: in steel, appa-
 ratus for, 19, 288: in steel, two methods for (abst.), 10, 84: in
 metallurgical products, ores, and fuel (abst.), 1, 560: in oils
 (abst.), 10, 44: in organic compounds, new method for (abst.),
 (claim of priority), 1, 487, 542: in proteids (abst.), 8, 60: in
 pyrites, 16, 398; 17, 181, 397, 772; 18, 446, 685: in pyrites (abst.),
 4, 161: in sulphides (abst.), 1, 540: in sulphides, natural (abst.),
 1, 487: in vulcanized rubber (abst.), - - - - - 7, 178
 Sulphur determinations, in albumin (abst.), 12, 176: standard iodine
 solution for, - - - - - 19, 261
 Sulphuretted hydrogen. See Hydrogen sulphide.

Sulphuric acid, action of, on bromodurene (abst.), 9, 215: action of, on cinchonine in the presence of oxalic acid (abst.), 10, 83: action of cold, on lead and its alloys, 5, 219: action of, at 100°, on lead and its alloys, 5, 224: action of, upon mercury, 19, 873; 20, 100: action of, on oleic acid (abst.), 8, 85: action of, on potassium iodide (abst.), 5, 232: action of, on quinol, and value of product as a developer, 13, 155: action of, on starch (abst.), 1, 101: behavior of, with nitrogen tetroxide (abst.), 4, 265: and calcium chloride, relative values of, as desiccating agents (abst.), 6, 98: concentrated, and copper, reaction of, 17, 904: on the concentration of (abst.), 6, 244: decomposition of, by mercury, 20, 515: determination of, 18, 682: determination of, as barium sulphate, effect of excess of reagent on, 18, 793: determination of, when combined with alkaline earths (abst.), 7, 251: determination of, by photometric method, 18, 661: determination of, volumetric (abst.), 1, 330: formation of, during the preparation of dithionic acid (abst.), 8, 177: improvements in manufacture of, 15, 624; 16, 498: influence of Glover's tower on the manufacture of (abst.), 7, 124: loss of nitre in the manufacture of (abst.), 6, 141: made in United States, 15, 563: moisture retained by gases dried by means of (abst.), 7, 295: normal percentage of, in wine (abst.), 1, 365: phenomenon in electrolysis of (abst.), 5, 232: presence of, in wine (abst.), 1, 365: purification of (abst.), 7, 244: reaction of chromic anhydride with (abst.), 4, 170: reaction of, with copper, 17, 904: reduction of, by copper, 18, 251: standardization of, 17, 351: table of specific gravity of, etc., P. 2, 26: titration of, for hyponitric acid, P. 2, 149; 1, 18: use of, for oxidizing, in place of nitric acid (abst.), 7, 211: in wine, on the (abst.), 1, 364

Sulphuric acid process, recent theories of, 14, 24

Sulphurous acid, detection of, in wine (abst.), 4, 263: determination of (abst.), 6, 194: determination of, in wines (abst.), 4, 192, 205: purification of mineral oil with (abst.), 8, 206: and sulphites, acidimetric determination of (abst.), 8, 180: titration of (abst.), 6, 26

Sulphurous baths, observations on (abst.), 1, 389

Sunflower seeds, proteids of, 18, 622; 19, 487

Sunlight, alleged decomposition of phosphorous anhydride by (abst.), 6, 44: decomposition of aqueous solutions of hypochlorous acid and of chlorine in (abst.), 7, 120: influence of, on germs of microbes (abst.), 7, 77: reduction of metallic oxides in, 4, 3

Superphosphates, on (abst.), 6, 244: free acid in (abst.), 9, 224: estimation of precipitated or reduced phosphoric acid in, P. 2, 64: estimation of water in (abst.), 12, 412: rate of reversion in, 6, 224: reversion of (abst.), 2, 131

Support, universal, for pocket spectroscope (abst.), 1, 379, 397

Supports of sheet iron for use with blowpipe, P. 2, 106

Surface tension, determination of molecular weight of liquids by means of, 18, 514

Surface tensions of solutions of oxalic, tartaric, and citric acids,	20, 128
Surfaces, curved, apparatus for delineation of, - - - - -	13, 263
Swallow's nests, composition of edible (abst.), - - - - -	7, 289
Sweet potato, carbohydrates of (abst.), - - - - -	12, 351
<i>Symplocarpus racemosa</i> , sugar in (abst.), - - - - -	7, 208
Synthesis of organic compounds by electrolysis (abst.), - - - - -	4, 239
Syrups and sugars, incineration of, without sulphuric acid (abst.), - - - - -	12, 18
Tables, specific gravity (abst.), - - - - -	10, 159
Taka diastase, notes on, - - - - -	20, 639
Talc, constitution of (abst.), - - - - -	12, 351
Tallow, adulteration of, with cotton-seed oil (abst.), - - - - -	10, 86
Tallow and butter, determination of specific gravity of (abst.), - - - - -	8, 205
Tan liquors, titration of free acid in (abst.), - - - - -	1, 367
Tank residues in copper refining, composition and formation of, - - - - -	19, 778
Tannate, quinine, estimation of quinine in (abst.), - - - - -	12, 120
Tannic acid, comparison of several methods of determining, 4, 49, 62: contained in the berry of the sorbus tree (abst.), 9, 101: determination of (abst.), 7, 249: determination of, in tanning materials, 4, 4: determination of, in wine (abst.), 4, 233: new test for (abst.), 10, 182	
Tannins, action of air on solutions of (abst.), 6, 171: determination of, 9, 52: (abst.), 4, 195: determination of, comparison of methods for (abst.), 1, 102: determination of, improvements in (abst.), 6, 98: determination of, by means of metallic oxides, 17, 811: determination of, in various vegetable substances (abst.), 6, 35: determination of, in wines (abst.), 4, 191: in kola, 19, 89: notes on Hammer's method of estimating, 9, 56: notes on Loewenthal's method of estimating, 9, 63; 15, 560: standard solution of, action of light and darkness on, - - - - -	2, 246
Tannins, classification of, 20, 34: examination of (abst.), 6, 171: oak, preparation of, 15, 344: oak bark, recent literature of, - - - - -	20, 35
Tanning extracts, examination of (abst.) - - - - -	6, 196
Tanning materials, composition of the ashes of, 20, 338: estimation of tannic acid in, 4, 4: qualitative determination of, - - - - -	16, 247
Tantalum, derivatives of, 18, 38: qualitative reactions of, 18, 50: separation of, from columbium, - - - - -	18, 48
Tantalum oxide, action of phosphorus pentachloride on, 18, 61: reaction of carbon tetrachloride with, - - - - -	18, 532
Tar from animal matters, substances contained in (abst.), 2, 97: coal, cumarone of (abst.), 12, 162: coal, high boiling phenols in (abst.), 7, 57: coal, lutidine of (abst.), 6, 82: coal, occurrence of carboxylic acids in (abst.), 7, 249: separation of benzene, toluene, etc., from (abst.), 6, 101: from Sutherland's gas producers, results of the examination of (abst.), - - - - -	6, 31
Tars, analytical examination of (abst.), - - - - -	6, 25
Tariff, report of the committee on, - - - - -	16, 102
Tarry residues from petroleum, utilization of (abst.), - - - - -	10, 93
Tartar emetics, falsification of (abst.), - - - - -	6, 37, 175

Tartaric acid, criticism of methods for determining (abst.), 10, 23: decomposition of, in the presence of glycerol at a high temperature (abst.), 8, 110: detection of, in wine (abst.), 1, 364: determination of, in argols (abst.), 1, 102: determination of, in crude tartar, etc., (abst.), 7, 88: determination of, in lees and inferior argols (abst.), 1, 369: determination of, in wine (abst.), 6, 97: manufacture of (abst.), 4, 292: preparation of succinic acid from (abst.), 4, 205: products of dry distillation of (abst.), 4, 263: surface-tension of solutions of, - - - - - 20, 129

Tartaric and citric acids, on (abst.), - - - - - 5, 231

Tartaric glucoside (abst.), - - - - - 6, 132

Tartrate, acid, estimation of potassium as, P. 1, 98: calcium acid, note on, 13, 144: potassium acid, determination of (abst.), 7, 295: potassium acid, determination of (abst.), - - - - - 9, 120

Tartrates, influence of, on the digestion of albuminoids, - - - - - 12, 394

Tautomeric compounds, determination of the constitution of (abst.), 12, 167

Tea, analyses of (abst.), 4, 189: Chinese, characteristics, detection of adulterations (abst.), 1, 362: Japanese, analyses of (abst.), 6, 312: Pekoe Ceylon, analysis of, - - - - - 13, 237

Teaching of chemistry, 15, 463: relation of, to research, - - - - - 15, 665

Technical chemistry, opening address before section of, World's Congress of chemists, - - - - - 15, 545

Telluride ores, assay of, - - - - - 20, 586

Tellurium, atomic weight of, 18, 208; 19, 367: (abst.), 6, 129: compounds, reactions of (abst.), 5, 116: determination of, in copper bullion, 17, 280: different forms of (abst.), 10, 10: some new reactions of, 17, 853: and selenium, notes on, 19, 771: and selenium, separation of, and preparation of, from lead chamber deposit (abst.), 6, 47: separation of, from copper residues, - - - - - 17, 849

Tellurium dioxide, and its combinations with acids (abst.), 8, 163: new oxide of (abst.), 5, 115: sulphoxide (abst.), - - - - - 5, 116

Temperature, calorimetric determination of (abst.), 2, 371: correction of errors due to change of, in volumetric analysis, P. 1, 188: influence of, on reaction between barium chloride and potassium oxalate (abst.), 2, 346: influence of, in sugar polarization, - - - - - 1, 26

Temperature regulator (abst.), - - - - - 1, 91

Temperatures, critical, of liquids (abst.), - - - - - 4, 264

Terbium, spectrum of (abst.), - - - - - 4, 223

Terebenthic acid (abst.), - - - - - 4, 227

Terpenes, chemistry of (abst.), 7, 121: contribution to the knowledge of (abst.), 7, 122: and essential oils (abst.), 7, 246: molecular refraction of (abst.), - - - - - 4, 173

Terpilene, optically active, transformation of oil of turpentine into (abst.), 8, 72: transformation of, into a menthene (abst.), - - - - - 10, 191

Terpilenol, synthesis of an inactive (abst.), - - - - - 8, 183

Test paper, methyl violet, - - - - - 4, 31

Testing and sampling, international methods of (abst.), - - - - - 6, 32

Tetrabrombenzene (abst.),	4, 175
Tetrabromdiacetyl, symmetrical (abst.),	12, 160
Tetrahedrite from Peru, analysis of (abst.),	1, 393
1:5-Tetrahydronaphthalenediamine, alicyclic, decomposition of, into its optically active components (abst.),	12, 164
Tetrahydroquinoline (abst.),	5, 241
Tetraethylammonium bromide, preparation of,	1, 387
Tetramethylbenzidine (abst.),	6, 87
Tetramethylamidothiobenzophenone (abst.),	10, 40
Tetramethylethylene and its derivatives (abst.),	2, 54
Tetramethylsuccinic and trimethylglutaric acids (abst.),	12, 157
Tetraphenylazine, a study of,	18, 112
Tetraphenylene, disulpho-,	13, 270
Tetraphenylethylene, preparation of (abst.),	10, 81
Tetraphenylmethane, on,	20, 773
Tetrathionate, potassium, experiments on (abst.),	4, 224
Tetraethylammonium bromoselenate,	20, 574
Thalloequin test for quinine, modifications of,	19, 331
Thallin compounds, derivatives of <i>p</i> -quinanisoil (abst.),	7, 84
Thallium, atomic weight of, 16, 186; 17, 209: some new compounds of, 18, 970: determination of (abst.), 12, 17: electrolysis of pyrophosphate of (abst.),	12, 172
Thallium oxides, action of hydrogen dioxide on (abst.),	2, 50
Thallous platinocyanide, 18, 976: tellurate, 18, 975: thallic trinitride, 18, 973: trinitride,	18, 970
Theobromine, determination of, in cocoa and chocolate (abst.), 1, 365: determination of, in kola, 19, 87: transformation of xanthine into (abst.),	4, 264
Thermochemical data (abst.), 2, 88: investigations, (abst.), 1, 293: results, remarks on (abst.),	6, 34
Thermo-electric elements, electromotive forces and resistance of (abst.),	1, 585
Thermometer, air, new form of, for technical purposes, 12, 277: for high temperatures, improved mercurial,	16, 396
Thermometers, official methods for verifying, 20, 921: rise of freezing-point in (abst.),	12, 413
Thermometry, use of argon in,	17, 477
Thermoregulator (abst.),	7, 92
Thermostat, delicate (abst.),	1, 91
Thiacetic acid a substitute for hydrogen sulphide in qualitative analysis,	17, 338
Thialdine, oxidation of, with nitric acid (abst.),	1, 555
Thiamides and amidines of monobasic organic acids (abst.),	2, 188
Thiocarbamate of ammonium, use of, in analytical work (abst.),	9, 115
Thiocarbanilide,	3, 151
Thiocyanates, metallic, action of, on aliphatic chlorhydrins	20, 668
Thiocyanates, halo-, of lead, study of,	19, 820

Thioformanilide, action of heat on (abst.) - - - - - 4, 206

Thiophen, preparation of, 12, 83: synthesis of (abst.) - - - - 7, 206, 230

o-Thiophendicarboxylic acid and *o*-thioxen (abst.) - - - - 9, 193

Thiophosphoryl chloride, action of, on silver nitrate (abst.) - - - - 4, 224

Thiosulphate, determination of, in presence of sulphide and sulphite (abst.) - - - - - 4, 160

Thiosulphates, conversion of, into sulphates by means of potassium permanganate (abst.), 6, 96: determination of (abst.) - - - - 1, 89

Thiourea, action of alcoholic potassium hydroxide on (abst.), 8, 166: compound, a new, 1, 415: transformation of carbon oxy sulphide into (abst.) - - - - - 4, 236

Thioxalate, ethyl (abst.) - - - - - 5, 236

o-Thioxen and *o*-thiophendicarboxylic acid (abst.) - - - - 9, 193

Thollon's spectroscope, note on (abst.) - - - - - 1, 172

Thomas slag, adulteration of (abst.), 12, 413: determination of phosphorus in (abst.) - - - - - 9, 118

Thorite, mineral resembling, analysis of, - - - - - 2, 73

Thorium, atomic weight of (abst.), 5, 118: estimation of, 18, 782: separation of, from iron, 20, 846: separation of, from other rare earths, by means of potassium trinitride, - - - - - 18, 947

Thorium dioxide, action of phosphorus pentachloride upon, 17, 654: oxide (abst.), 7, 285: tetrabromide, derivatives of, 20, 839: tetrachloride, derivatives of, - - - - - 20, 815

Thymenesulphonic acid, combination of, with diazo compounds, 3, 112: and some of its salts, - - - - - 3, 103, 110

Thymol, synthesis of, from cuminol (abst.) - - - - - 4, 205

Thymol and resorcinol, reactions of (abst.) - - - - - 12, 502

Tiglic and angelic acids, constitution of (abst.), 1, 241: contributions to the knowledge of (abst.) - - - - - 1, 240

Tin, new acid of (abst.), 10, 187: alloys of, with antimony, arsenic and lead, analysis of, 17, 869: alloys of, with lead, blowpipe reactions of, P. 2, 108: alloys of, with lead, commercial valuation of, 16, 451: alloys of, with lead, specific heat of (abst.), 8, 197: atomic weight of, 17, 210: behavior of chlorosulphonic acid with (abst.), 4, 261: combinations of disulphides and diselenides of (abst.), 5, 117: detection of, in presence of antimony (abst.), 4, 168: determination of, in aluminum solders, 18, 777: determination of, electrolytic, in tin ores, 20, 687: determination of, in tin slags (abst.), 7, 210: electrolysis of pyrophosphate of (abst.), 12, 171: a grey modification of (abst.), 1, 494: occurrence of, in canned food, 13, 200: organometallic compounds of (abst.) - - - - - 1, 399

Tin, separation of, from antimony (abst.), 8, 76; 9, 11: from antimony, volumetric (abst.), 8, 200: from antimony and arsenic (abst.), 8, 76; 9, 11: from antimony and arsenic, qualitative (abst.), 1, 483; 6, 98: from bismuth, 15, 204: from cadmium, 15, 201: from copper, 15, 197: from gold and platinum (abst.), 8, 278; 10, 156: from

mercury, 15, 204: from titanium (abst.), 12, 175: from tungsten (abst.), - - - - - 9, 200

Tin, phosphor-, analysis of, - - - - - 19, 396

Tin^t, photo-chemical estimation of (abst.), - - - - - 10, 86

Tintometer (abst.), - - - - - 10, 115

Titanates of barium and strontium (abst.), - - - - - 8, 178

Titanic acid, test for (abst.), 7, 210: volatility of, 20, 467: volumetric determination of, in iron ores, - - - - - 17, 878

Titaniferous iron ores, analysis of (abst.), - - - - - 4, 164

Titanium in blast furnaces, 12, 91: in clays (discussion), 18, 914: detection and estimation of (abst.), 5, 54: determination of, in aluminum alloys, 18, 775: determination of, by hydrogen peroxide, 13, 210: determination of, in iron ores (abst.), 4, 165: error in determining, due to presence of fluorine, 17, 718: occurrence of, 18, 402: separation of, from iron, 16, 427; 20, 513, 854: separation of, from tin, - - - - - 12, 175

Titanium rubidium fluoride, - - - - - 18, 58

Titanium tetrachloride, action of, on acetic acid and acetic anhydride (abst.), 2, 363: compound of, with acetyl chloride (abst.), 2, 430: compound of, with ethyl oxide (abst.) 2, 434: compound of, with phosphorus trichloride (abst.), - - - - - 2, 434

Tobacco, estimation of nicotine in, - - - - - 2, 338

Tobacco and tea Japanese (abst.), - - - - - 6, 312

Tolane, hydration of (abst.), - - - - - 10, 83

Toluene and benzene, action of methylene chloride on (abst.), 6, 163: and methyl chloride in presence of aluminum chloride, hydrocarbons formed from (abst.), 1, 280, 398: separation of, from crude tar, naphtha, and crude benzenes (abst.), 6, 101: syntheses by action of metallic chlorides upon (abst.), - - - - - 1, 397

Toluene, amidoctyl- (abst.), 7, 176: brom-*p*-ethyl-, oxidation of, 1, 284: nitro-, presence of *m*-nitrotoluene in commercial (abst.), 1, 486: *o*-nitro-, production of anthranilic acid from (abst.), - - - - - 2, 227

Toluenes, *iso*-butyl-*o*-amido-, isomeric (abst.), 7, 88: dihydroxy- (abst.), - - - - - 5, 61

o-Toluenesulphamide, oxidation of (abst.), - - - - - 2, 221

Toluenesulphonchloride (abst.), - - - - - 1, 287

Toluic acid, sulphamine-*m*, oxidation of, - - - - - 2, 369

o-Toluic acid, nitro- (abst.), - - - - - 6, 163

Toluidine, compounds of, with naphthoquinone (abst.), 5, 19: compounds of nickel and cobalt chlorides with (abst.), 1, 165: introduction of methyl or ethyl groups into (abst.), 5, 64: succinyl compounds of (abst.), 1, 160, 397: nitro-, a new (abst.), 7, 174: oxypropyl- (abst.), - - - - - 5, 29, 58

o-Toluidine, compounds of, with metallic salts, - - - - - 3, 149

o-Toluidine, nitro-, and a few of its derivatives (abst.), - - - - - 6, 310

o- and *p*-Toluidine, some derivatives of (abst.), - - - - - 2, 171

p-Toluidine, compounds of, with metallic salts, 3, 146: and dichlor-

Uranyl chloride, compounds of, with ammonia (abst.), 7, 121: selenates and selenites (abst.), - - - - - 1, 255

Urea, action of hypochlorites on (abst.), 1, 101: action of alcoholic potassium hydroxide on (abst.), 8, 166: apparatus for rapid estimation of, 7, 72: determination of, by means of alkaline hypochlorites and hypobromites (abst.), 2, 132: determination of, destruction of foam in (abst.), 9, 123: determination of, rapid method for, 12, 283: determination of, with sodium hypobromite (abst.), 2, 430: determination of, in urine (abst.), 4, 196: on Doremus' apparatus for estimation of, 7, 166: on Doremus' apparatus for estimation of, rebuttal, 7, 168: formation of, from albumin (abst.), 12, 475: heat of solution of, in water and in ethyl alcohol, 18, 156: influence of sugar on determination of (abst.), 2, 132: new ferment for (abst.), 1, 387, 488: review of Knop-Hufner method for the determination of (abst.), 7, 292: transformation of carbon oxsulphide into (abst.), 4, 236: transformation of, into cyanamide (abst.), - - - - - 4, 221

Urea acrolein, - - - - - 5, 36

Urea chloride synthesis, modification of (abst.), - - - - - 12, 229

Ureas, condensed, remarks upon Schiff's publications upon, 5, 36: substituted, action of alcoholic potassium hydroxide on (abst.), - - - - - 8, 166

Ureameter, new form of, - - - - - 7, 72; 8, 96; 15, 650

Urethane, heat of solution of, in water, methyl, ethyl, and propyl alcohols, chloroform, and toluene, - - - - - 18, 156

Urethane, camphol- (abst.), - - - - - 4, 235

Urethanes of the aliphatic series, two properties of (abst.), - - - - - 8, 166

Urethanes, dithio- (abst.), - - - - - 4, 268

Uric acid (abst.), 7, 29: derivatives of alloxan series, syntheses of (abst.), 1, 172, 275: determination of (abst.), 8, 78: influence of glycerol and fat on the secretion of, in man (abst.), 8, 185: in urine, rapid estimation of, - - - - - 19, 649

pseudo-Uric acid (abst.), - - - - - 1, 389

Urinary calculi, analyses of, - - - - - P. 1, 2, 60

Urine, bacterial, determination of albumin in (abst.), 12, 415: and blood, peptones in (abst.), 8, 231: composition of normal, 19, 382: determination of albumin in (abst.), 10, 197: determination of bile constituents in (abst.), 12, 414: determination of uric acid in, 19, 649: diabetic, β -hydroxybutyric acid in (abst.), 7, 177: ethyldiacetic acid in (abst.), 1, 254: healthy, nitric acid in, and method for its determination, P. 2, 98: of herbivorae, source of hippuric acid in (abst.), 2, 138: imperfectly oxidized phosphorus in (abst.), 6, 129: large crystals in old (abst.), 4, 174: and milk of herbivorae, estimation of nitrogen in (abst.), 8, 279: mineral constituents of, P. 1, 2, 61: paraxanthine in (abst.), 5, 65: pathological (abst.), 7, 288: rapid method of estimating urea in, 12, 283: volatile fatty acids in (abst.), 8, 86: see also Urea, Ureameter, Uric acid.

Uruguay, chemical study of products of (abst.), - - - - - 4, 237

Valence of oxygen and structure of its compounds (review) - - - - - 18, 283

Valence, teachings of, in relation to the electro-chemical theory (abst.), - - - - - 2, 291

Valeric acid, hydroxy-, from allyldimethylcarbinol (abst.), - - - - - 2, 178

Vanadates, thio- (abst.), - - - - - 12, 472

Vanadic acid, separation of, from tungstic acid (abst.), 12, 175: volumetric determination of (abst.), - - - - - 1, 97

Vanadium, compounds of, in soda liquors (abst.), 4, 73: determination of, P. 1, 61: determination of, by means of oxycellulose (abst.), 8, 78: extraction of, from basic slags of Creusot (abst.), 4, 241: occurrence of, in American hematites, etc., P. 1, 84: occurrence of, in American magnetites, P. 1, 58: separation of, from arsenic, 18, 105: volumetric estimation of, in presence of small quantities of chromium, - - - - - 20, 461

Vanadium oxychloride, preparation of (abst.), 8, 71: trichloride from vanadium trisulphide (abst.), - - - - - 5, 50

Vanillin in certain unrefined beet sugars (abst.), 2, 368: new derivatives of, preliminary note on, - - - - - 20, 316

Vapor density, determination of, 12, 399: (abst.), 1, 170; 4, 176: determination of, below the boiling-point (abst.), 12, 168: determination of, at high temperatures, for substances which attack mercury (abst.), 1, 377: determination of, in a vacuum, limits of the method (abst.), 1, 292, 380: observations on (abst.), - - - - - 2, 371

Vapor tensions of mixtures of volatile liquids, - - - - - 17, 615, 690

Vapor pressures, new method of determining (abst.), - - - - - 7, 53

Vaporization of metals *in vacuo* (abst.), - - - - - 4, 242

Varnishes, analysis of, - - - - - 16, 344

Vegetable tissues, general method for analysis of (abst.), - - - - - 1, 345

Vegetation, determination of oxalic acid in (abst.), 8, 37: injury to, by gases from manufacturing processes (abst.), 6, 198: researches in (abst.), - - - - - 8, 21

Velocity of reactions (abst.), 2, 368: of the reaction between ferrous chloride, potassium chlorate, and hydrochloric acid, - - - - - 19, 199

Ventilation as measured by carbon dioxide in the air, - - - - - 15, 572

Veratralbine, chemistry of (abst.), - - - - - 1, 554

Veratrine, chemistry of (abst.), - - - - - 1, 553

Vesbium (abst.), - - - - - 2, 224

Vesuvius, ashes from, composition of (abst.), - - - - - 4, 237

Vetch, proteids of the, - - - - - 18, 583; 20, 406, 410

Vibrations, sonorous, chemical stability of matter under influence of (abst.), - - - - - 2, 433

Vicilin, a proteid from the horse-bean, pea, etc., 20, 348, 414: properties of, - - - - - 20, 414

Vignin, a proteid of the cow pea, composition and properties of, - - - - - 19, 497

Vinaconic acid, constitution of (abst.), 7, 82: synthesis of (abst.), - - - - - 7, 81

Vinegar, analysis of, and some characteristics of pure cider vinegar, 20, 3: analyses of, 2, 335: and cider, 7, 162: determination of acetic acid in, - - - - - 17, 741, 83;

Vinyl bromide and tribromide, remarks on the action of, on benzene in the presence of aluminum chloride (abst.), - - - 6, 166

Violet, Lauth's, spectroscopic examination of, - - - 6, 304

Viscosimeter, torsion, 15, 173: standardizing of, - - - 15, 454

Viscosimetry (abst.), - - - - 8, 109

Viscosity, catalytic phenomena caused by (abst.), - - - - 1, 386

Vitriol. See Sulphuric acid.

Vitellin and conglutin, - - - - 18, 609

Volhard's method of determining manganese, sources of error in, - 18, 498

Volta prize (abst.), - - - - 5, 121

Voltameter, new form of, 13, 207: silver, use of Gooch crucible as, - 12, 300

Volume alteration attending the mixture of salt solutions (abst.), - 5, 97

Volume. See Molecular volume, etc.

Volumes, additions to the law of (abst.), 1, 168: of solutions of hydrated salts, relations to water of composition (abst.), - - - 1, 392

Volumenometer (abst.), 1, 90, 586: simple form of (abst.), - - - 1, 379

Volumeter, a new gas- (abst.), - - - - 12, 175

Volumetric analysis, use of the term "normal" in (abst.), - - - 10, 114

Volumetric apparatus, 20, 731: government facilities for standardizing, - - - - 20, 912

Wages of chemical workers in United States, - - - - 15, 568

Wall papers, amounts of arsenic found in various, - - - - 2, 339

Walnut, proteids of the, - - - - 18, 616

Walnut oil (abst.), - - - - 8, 184

Wanklyn and Adams' method for estimating fat in milk, - - - 12, 488

Want column in Journal, report of committee on, - - - - 20, 234

Wash bottle, Chapman, 13, 126: with compressed air, 16, 148: for hot water, 17, 517: useful form of, - - - - 19, 584

Washington Section, meetings of, 17, (3), (23), (35), (40), (70); 18, (27), (36), (57), (66), (75); 19, (10), (16), (23), (28), (35), (43); 20, (2), (31), (48), (65), (71), (106).

Water, action of, on bismuth iodide (abst.), 4, 142: action of, on lead pipe, 13, 176: action of, on zinc and lead (abst.), 2, 432: analysis of remarkable sample of, 14, 34: in alcohol, detection of traces of, 1, 38: clarification of, by alum (abst.), 7, 200: combination of, with salts (abst.), 8, 179: of crystallization of alum (abst.), 9, 100: of crystallization, specific volume of (abst.), 2, 350: distilled, apparatus for obtaining, from service steam, P. 1, 211: distilled, free from ammonia, preparation of (abst.), 1, 586: hygiene of, 19, (18): microscopic examination of (abst.), 1, 367, 578: in milk, determination of (abst.), 4, 188: natural aperient, variability of (abst.), 10, 183: potable, and disease, 9, 44: potable, filtration of (abst.), 6, 140: rain, action of impure, on lead pipes, P. 1, 66: rain, proportions of chlorine and nitrogen in tropical, 19, 1: river, alleged sterilization of, by mine water, 12, 12: snow, examination of, 6, 187: softening of, by the Porter-Clark process (abst.), 6, 103: softening of, by use of fluorides, 12, 303: spring, unusual form

of, 14, 115: for use in boilers (abst.), 10, 172: for use in boilers, purification of, 15, 610: volumetric composition of, - - - - - 12, 275

Water analysis: alkalinity or acidity of potable waters, P. 2, 71: ammonia test in waters (abst.), 1, 565: ammonia process for water analysis, 5, 104: the ammonia method, with some new apparatus, 12, 457: collector for ammonia distillate, 20, 286: bacteria, testing for (abst.), 1, 103: chemical versus bacteriological analysis, 18, 166: bacteriological examination, sanitary value of a, 19, 591: carbon (and nitrogen), determination of, in waters, 9, 162: carbon dioxide, free, in water (abst.), 10, 71: estimation of carbon dioxide in water, by titration, 13, 98: chlorine, estimation of, in water, 16, 71: colors of natural waters, measurement of, 18, 264: valuation of color in, 18, 488: colorimeter for (abst.), 4, 163: coloring matter of natural water, 18, 68: hardness in waters, remarks on determination of (abst.), 6, 170: Clark's method for estimating of hardness in waters, 13, 114: lithium, determination of, in mineral waters, 12, 214: nitrates and nitrites, determination of, in water (abst.), 4, 163: determination of nitrates, 16, 72, 122, 193: determination of nitrites, 18, 21: test for nitrites in water (abst.), 4, 163: detection and estimation of nitrous acid in waters, 1, 136: nitrogen, organic, determination of, in waters (abst.), 4, 162: nitrogen and carbon, determination of, in waters, 9, 162: organic matter in water, actinic method for determination of, 8, 269: direct oxidation of, 14, 233: differentiation of, 20, 497: platinum iodide as a reagent for deleterious, 5, 74: organic purity of water, determination of (abst.), 1, 106: phosphoric acid, determination of, in contaminated waters (abst.), 9, 174: potable waters, analysis of, P. 1, 201: examination of (abst.), 4, 162: technical analysis of water (abst.), 12, 73: examination of water for technical purposes (abst.), 10, 180: Wanklyn's method of water analysis, necessity of standard conditions in, 8, 221: zinc in water, volumetric determination of (abst.), 1, 564: zinc in potable water (abst.), - - - - - 6, 77, 214

Water analysis, P. 2, 1: (abst.), 9, 219; 12, 413: chemical, versus bacteriological, 18, 166: improved methods of, 17, 296: modes of combination of the elements indicated in (abst.), - - - - - 1, 336

"Water" results and the public (abst.), - - - - - 9, 30

Water supply, of Albany, N. Y., 7, 261: of Asheville, N. C., examination of, 8, 154: of cities in United States, relative to purity of, 3, 98: of Jersey City and Newark, pollution of, 9, 81: of New York City, 4, 15: of New York City, contamination of, 4, 127: of New York City, study of, 8, 3: of Philadelphia, - - - - - 8, 126

Water supplies, the quality of, - - - - - 16, 772

Waters, of the Auvergne, mineral (abst.), 1, 271: of the Bourboule, analyses of (abst.), 2, 365, 431: Buxton thermal, analysis of (abst.), 4, 170: Croton, examination of, 8, 147, 157: from the Dismal Swamp, examination of, 8, 153: from Irondale, W. Va., analysis

of, mineral, 6, 123: from Isthmus of Panama, analyses of (abst.), 4, 242: from Lake Hope, New Zealand, analysis of, 9, 168: from Marienbad, analysis of (abst.), 2, 135: mineral, containing iron and nitrates (abst.), 2, 431: from the Missouri lead region, analysis of, P. 1, 179: Niagara river, aeration and composition of, 12, 449: Niagara river, peculiar reaction of, 14, 221: of river Nile, analysis of, 15, 34, 84: from Rosheim, analysis of, mineral (abst.), 1, 491: of Susquehanna River at Cooperstown, N. Y., examination of, 8, 150: from Texas, analysis of, mineral, 11, 141: of Yellowstone National Park, analysis of (abst.), - - - - 10, 188

Water-bath, constant level for, 16, 405: design for, - - - - 15, 374

Watermelon, mineral constituents of, - - - - 18, 1061

Water-oven and still, new form of, - - - - 17, 122

Waterproofing, Chevallot's process for (abst.), - - - - 9, 17

Watts fund, - - - - 7, 158

Weighing, electrical disturbance in, - - - - 20, 428

Weighing flask, new calibrated, 19, 198: to serve as a burette, - - 4, 6

Weighing pipette, new, - - - - 15, 190

Weights, reduction of, to vacuum (abst.), - - - - 1, 250

Weldon-Pechiney process for manufacture of chlorine (abst.), - - 9, 224

Wells in cities and towns, necessity for inspection of, - - - - 13, 44

Wheat, copper normally present in (abst.), 4, 188: insoluble carbohydrates of, 19, 291: manganese in the ash of, P. 2, 141: nitrogen compounds in different varieties of, 2, 333: proteids of, - - - - 16, 524

Wheat starch, constitution of, - - - - 19, 291

Whey, milk, and skim-milk, comparative study of, - - - - 15, 347

White lead, electrolytic process for manufacture of, - - - - 17, 835

Wine, alcohol in, determination of (abst.), 1, 573: alcohol in, correction for conversion of percentage by volume to percentage by weight of (abst.), 1, 572: champagne, clarification of (abst.), 4, 234: coloring-matters added to, systematic course for detection of (abst.), 1, 576, 577, 578: detection of aniline colors in (abst.), 1, 576: detection of artificial red coloring-matter in (abst.), 8, 81: detection of Bordeaux red in (abst.), 4, 191: detection of corallin in (abst.), 1, 576: detection of fuchsin in (abst.), 1, 574, 575, 576, 578: detection and determination of fuchsin in (abst.), 7, 294: detection of orange and yellow colors in (abst.), 8, 80: detection of free tartaric acid in (abst.), 1, 364: determination of acetic acid in (abst.), 1, 364: determination of astringent substances in (abst.), 4, 242: determination of extract in (abst.), 7, 63: determination of glycerol in (abst.), 2, 364; 4, 191: determination of phosphoric acid in (abst.), 11, 53: determination of red coloring-matters in (abst.), 4, 191: determination of sulphurous acid in (abst.), 4, 192: determination of tannin and cenogallic acid (abst.), 4, 191, 233: determination of tartaric acid in (abst.), 6, 97: examination of, for compounds of rosaniline (abst.), 8, 57: influence of plaster of Paris on the composition and chemical

character of (abst.), 6, 104: malt, 19, (30): method for analysis of (abst.), 4, 189: normal percentage of sulphuric acid in (abst.), 1, 365: palm, composition of (abst.), 1, 402: presence of glycol in (abst.), 4, 242: presence of sulphuric acid in (abst.), 1, 364, 365: spirits of, composition of (abst.), 8, 58: sulphurous acid in (abst.), 4, 263
 Wine oil (abst.), - - - - - 1, 296

Wines of Alsace-Lorraine, analyses of (abst.), 9, 219: analysis of pure (abst.), 6, 97: artificially colored claret (abst.), 5, 23: of bad years, composition of (abst.), 4, 192: California, some characteristics of, 16, 597: California, coloring-matter in red, 17, 213: existence of manganese in (abst.), 6, 200: Ohio, composition of, 20, 878: valuation of (abst.), - - - - - 6, 138

Wire drawing, lubricant for (abst.), - - - - - 8, 275

Wolframyl chloride, action of ammonia gas upon, - - - - - 15, 68

Wollastonite, action of sodium hydroxide and carbonate on (abst.), 4, 199

Wood, analysis of (abst.), 1, 345: composition of, researches on the (abst.), 1, 295: treatment of, in preparation of paper pulp, - - - - - 19, 314

Wood gum, composition of, 18, 214: from birch wood, - - - - - 18, 218

Wool grease, - - - - - 16, 535

Wool wash water. See Suint.

Wool, cotton, and silk, absorption of weak reagents by (abst.), - - - - - 5, 98

Wool and fur, origin, structure, composition, etc. (abst.), - - - - - 10, 184

Work, principle of maximum (abst.), - - - - - 7, 138

World's Chemical Congress. See Congress of Chemists.

Writing, detection of fraudulent (abst.), - - - - - 9, 224

Xanthine, transformation of, into theobromine and caffeine (abst.), 4, 264

Xanthine bases, formation of, from egg albumin (abst.), - - - - - 1, 165

Xylan, - - - - - 18, 215

Xylene, derivatives of (abst.), 8, 96: relations of physical constants of isomeric derivatives of (abst.), 8, 178: separation of, from crude tar, naphtha, and crude benzenes (abst.), - - - - - 6, 101

o-Xylene, derivatives of (abst.), - - - - - 7, 115

o-, *m*-, and *p*-Xylene, determination of (abst.), 6, 101: *p*-Xylene, estimation of (abst.), - - - - - 7, 90

Xylenes, from English and Scotch tar (abst.), 7, 89: and phthalic anhydride, acids produced from (abst.), - - - - - 5, 17

p-Xylenes, dinitro-, constitution of three (abst.), - - - - - 7, 175

Xylenesulphamides, oxidation of (abst.), - - - - - 1, 116, 283

Xylenesulphonic acids, oxidation of, - - - - - P. 2, 15

Xylenol, brominated (abst.), - - - - - 6, 132

Xyldine, action of acrolein on, 5, 1: action of benzaldehyde on, 8, 173: compounds of nickel and cobalt chlorides with (abst.), 1, 165: compound of oenanthaldehyde with, - - - - - 5, 2

1:2:4-*o*-Xyldine (abst.), - - - - - 6, 162

Xylose and wood gum from straw, etc. (abst.), - - - - - 12, 158

Yolk of egg, coloring-matter in (abst.), - - - - - 12, 165

Yopon. See *Ilex cassine*.

Yttrium, atomic weight of, - - - - - 18, 209
 Zinc, alloys of, with platinum metals, explosive (abst.), 4, 240: amyl iodide, and butyl iodide, action of, on acetone (abst.), 7, 58: atomic weight of, 18, 203: electrolysis of pyrophosphate of (abst.), 12, 170: magnesium and iron, as reducing agents with ferric salts (abst.), 4, 223: in potable water (abst.), - - - - - 6, 77, 214
 Zinc acetate, water of crystallization of (abst.), 1, 158: ammonium compounds, manufacture and use of (abst.), 6, 139: bromide, preparation of hydrobromic acid from (abst.), 6, 32: chloride, combinations of, with hydrochloric acid (abst.), 8, 163: chloride, hydrates of (abst.), 8, 162: ferrite, artificial production of franklinite (abst.), 9, 100: ferrocyanide, 18, 1100; 19, 542, 547: hydroxide, crystallized (abst.), 7, 285: oxide in alkaline solutions, 2, 29: oxide deposit in blast-furnace, analysis of, 4, 256: new oxychloride of (abst.), 4, 239: sulphate and potassium hydroxide, reaction between, 17, 358: sulphide, determination of (abst.), - - - - - 9, 35
 Zinc, determination of, 17, 310: in aluminum alloys, 18, 776: electrolytic, 18, 659: (abst.), 1, 330: in potable water (abst.), 1, 564: by precipitation as oxalate (abst.), 1, 327: as pyrophosphate, 4, 26: volumetric, 17, 473: (abst.), 1, 329, 534; 4, 166: volumetric, indicator for (abst.), 4, 166: in zinc dust, 7, 136: (abst.), 9, 36: in zinc ores (abst.), - - - - - 4, 166; 12, 502
 Zinc dust, action of, on benzyl chloride (abst.), 8, 181: occlusion of hydrogen by (abst.), 7, 113: source of hydrogen occluded by (abst.), 7, 286: and sulphur, experiments with (abst.), 5, 53: valuation of (abst.), - - - - - 12, 503
 Zinc ethide, action of oxygen upon (abst.), - - - - - 12, 156
 Zinc ores, notes on the analysis of, - - - - - 11, 49
 Zinc rods, peculiar corrosion of, - - - - - 13, 286
 Zinc, separation of, from aluminum (abst.), 1, 529: from arsenic, by hydrochloric acid gas, 18, 1041: from bismuth, electrolytic, 15, 104: from cadmium (abst.), 7, 296; 8, 277: from cobalt (abst.), 8, 277; 9, 9: from copper, electrolytic, 15, 103: from gallium (abst.), 4, 168: from iron (abst.), 1, 529; 8, 277; 9, 9: from manganese (abst.), 1, 327; 8, 277: from nickel (abst.), 1, 332; 6, 288; 8, 277; 9, 9
 Zinc tanks, action of water on (abst.), - - - - - 2, 432
 Zinc-copper couple, estimation of chlorates by (abst.), - - - - - 10, 26
 Zirconates, a study of the, - - - - - 18, 434
 Zirconia, preparation of, - - - - - 8, 91
 Zirconium, revision of the atomic weight of, 20, 119: separation of, by means of sulphurous acid, 16, 475: separation of, from iron, 20, 846: separation of, from uranium, with hydrogen peroxide, - - 20, 514
 Zirconium chlorides, 17, 842: chlorides, examination of, 16, 469: dioxide, action of phosphorus pentachloride upon, 17, 654: dioxide, some properties of, 20, 273: nitride, preparation of, 20, 843: oxalates, 19, 12: oxybromides, 20, 324: oxychlorides, 20, 321: oxyiodides, 20, 328: sulphite, 17, 448: tetrabromide, derivatives of, 20, 839: tetrachloride, derivatives of, 20, 815: tetraiodide, - - - - - 18, 673

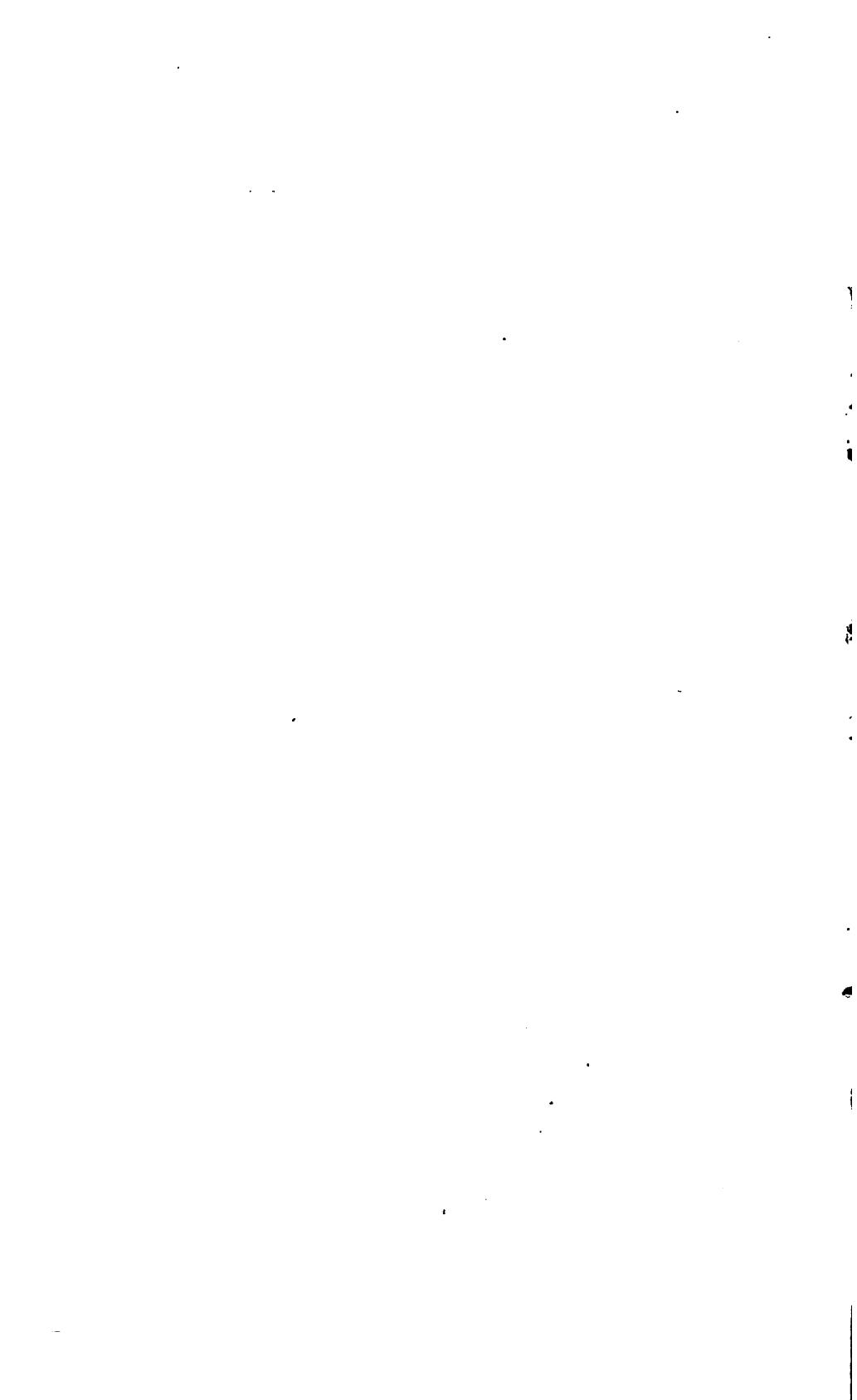
ERRATA.

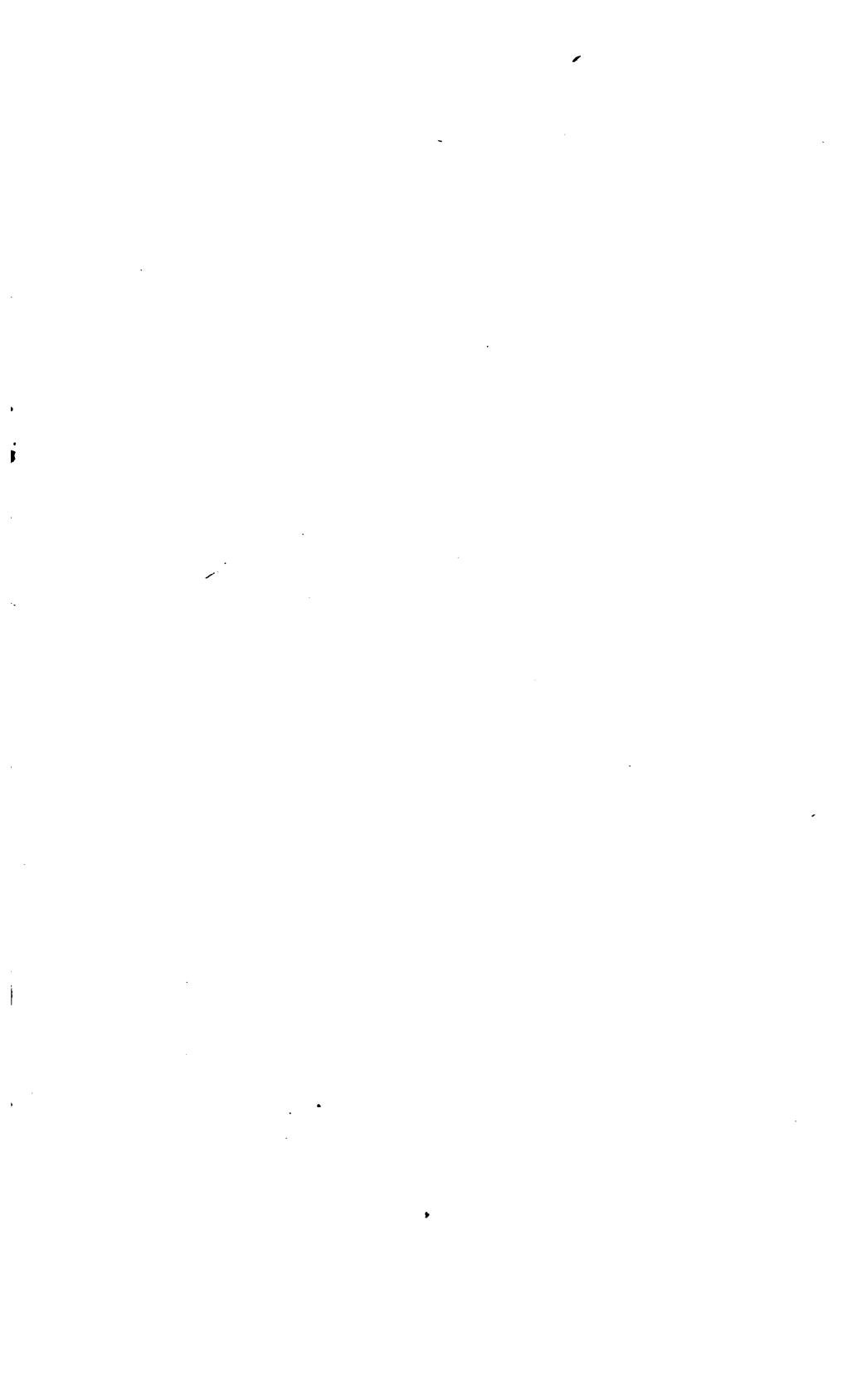
Page.	Line.	
18	3 from top ;	<i>for potassium read rubidium.</i>
23	20 " bottom ;	<i>this article should be entered under De Schweinitz and Dorset.</i>
29	5 " top ;	<i>for 79 read 76.</i>
32	1 " "	<i>" Föster read Foster.</i>
34	21 " "	<i>" Cartenmeister read Gartenmeister.</i>
35	18 " bottom ;	<i>" 496 read 196.</i>
37	15 " top ;	<i>" Gottsch read Götsch.</i>
38	2 " "	<i>" 192 read 191.</i>
40	12 " "	<i>insert Guthzeit, M. See Conrad, M.</i>
42	14 " "	<i>for 202 read 203.</i>
42	15 " "	<i>" 202 " 203.</i>
42	19 " "	<i>add The valency of oxygen, etc., 18, 283.</i>
45	14 " "	<i>for H. W. read R. W.</i>
48	19 " bottom ,	<i>" 5 read 4.</i>
52	12 " top ;	<i>" caffeine compounds read caffein compound.</i>
54	8 " "	<i>" F. de read T. de.</i>
54	24 " "	<i>" 224 read 225.</i>
56	22 " bottom ;	<i>" 247 " 147.</i>
56	17 " "	<i>" actinium read actinism.</i>
67	4 " top ;	<i>after 2, 96 add 4, 206.</i>
67	4 " "	<i>the article on tolylmethylketone belongs to MICHAELIS alone.</i>
67	9 " "	<i>insert Michler, W. and H. Pattinson. Tetramethylbenzidine (abst.), 6, 87.</i>
68	23 " "	<i>for MONNETY COS read MONNET v Cos.</i>
75	1 " bottom ;	<i>insert Pattinson, H. See Michler, W.</i>
77	10 " top ;	<i>delete Some derivatives of hydrindonaphthene, 6, 160.</i>
77	14 " bottom ;	<i>for Smitt read Smett.</i>
84	13 " "	<i>" 200 read 199.</i>
85	24 " top ;	<i>delete first comma.</i>
85	25 " "	<i>for Peligot read Pélidot.</i>
91	20 " bottom ;	<i>" Smitt read Smett.</i>
92	8 " "	<i>insert Smith, H. W. See Dixon, H. B.</i>
94	11 " "	<i>for Staedel read Städel.</i>
96	21 " top ;	<i>" 230 read 228.</i>
108	14 " bottom ;	<i>insert Wright, C. R. A. See also Roberts, W. C.</i>
110	2 " top :	<i>for 75 read 74.</i>
118	21 " "	<i>" 132 read 133.</i>
121	9 " bottom :	<i>after 166, add 5, 245.</i>
122	6 " top ;	<i>for 192 read 193.</i>
123	19 " "	<i>after 260 add 18, 717, 721.</i>

Page.	Line.
123	4 from bottom ; for 857 read 587.
126	16 " top ; " 189 " 188.
127	5 " bottom ; add from lead, by hydrochloric acid gas, 18, 1033.
129	23 " " for 1039 read 1038.
129	22 " " " 78 read 278.
129	22 " " " 56 " 156.
129	20 " " " 78 " 278.
131	9 " top ; " 1 " 2.
133	5 " bottom ; " 134 " 135.
135	9 " top ; " 802 " 803.
141	19 " " after 165 add 12, 352.
143	3 " " for 10 read 5.
144	9 " " after (68) add 18, (42).
144	15 " " for one read on.
145	8 " " after 18 delete (abst.).
150	2 " " for 141 read 241.
150	9 " " " 1038 " 1035.
151	22 " bottom ; " lecturer read lecture.
152	21 " " delete 14, 155.
153	19 " top ; for last 84 read 85.
159	15 " " " 3 read 5.
164	12 " bottom ; after from add 16, 697.
166	13 " " for 365 read 364.
167	21 " top ; after 710 add porcelain, 13, 195.
171	2 " bottom ; read and ozone, 2, 34, 147, (abst.), 2, 59.
172	1 " top ; after analysis add 18, 918.
175	3 " " add iridium, industry of (abst.), 7, 66.
175	10 " bottom ; for 271 read 721.
176	5 " " delete 245.
178	10 " " after 801 add from antimony, by hydrochloric acid gas, 18, 1033.
183	8 " " for methyl read methyl.
184	5 " " " 14 read 13.
186	17 " " delete 520.
187	9 " " for 362 read 361.
190	13 " " " herbivora read herbivora.
194	21 " " after 385 add valence of, 18, 233.
194	4 " " read dioxide, 2, 34, 147, (abst.), 2, 59.
195	8 " " delete 233.
197	24 " " for phenthrene read phenanthrene.
199	18 " " after 210 add 9, 218.
199	12 " " for 295 read 925.
204	6 " top ; after 83 add 90.
204	24 " bottom ; for 2 read 1.
204	4 " " after pea add 18, 583.
204	1 " " " vetch add 18, 583.

Page. Line.

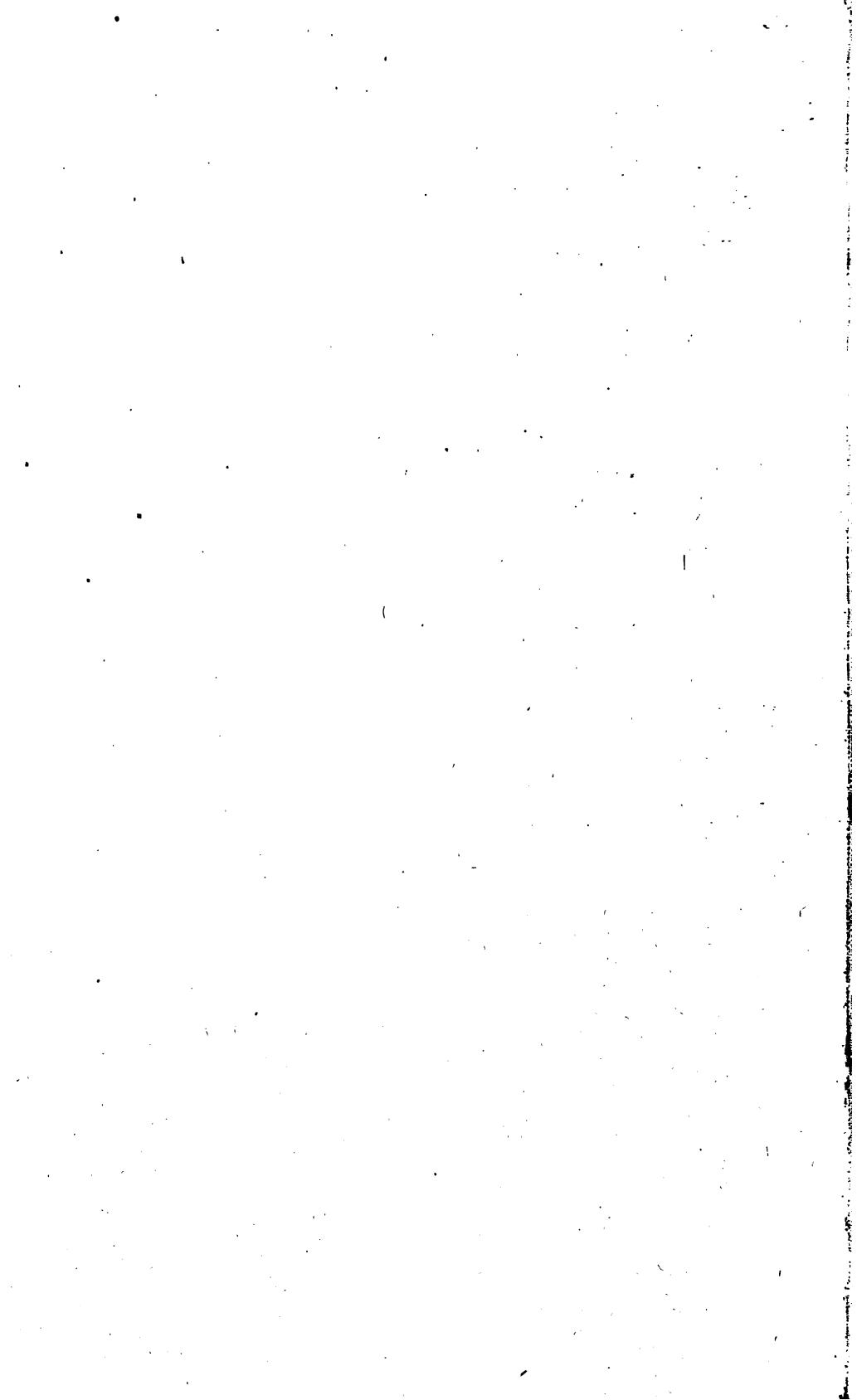
216 10 from top; *after 18 add 170.*
217 11 " bottom; *for 1 read 2.*
218 23 " " " 178 *read 187.*
220 23 " " *after 251 add 942.*
221 20 " top; *for tannins read tannin.*
224 14 " bottom; " 451 *read 541.*











41C
379

UHOZER
BYRON, MICH.
CUSTON MADE